Society of Manufacturing Engineers
Wabash Valley Chapter C275

September, 2007

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Upcoming Dates

Sep. 13 Wabash meeting

Sep. 14-15 SME Leadership Bootcamp, Columbus, Ohio

Oct. 11 Wabash meeting

Nov. 8 Wabash meeting

Dec. TBD Wabash meeting

Jan. 10 Wabash meeting

Feb. 14 Wabash meeting

Mar. 13 Wabash meeting

Apr. 10 Wabash meeting

May 8 Wabash meeting

SME Wabash Valley C275 Meeting Schedule

September 13, 2007, Thursday

6:00 PM Social
6:30 PM Dinner
7:15 PM Mike Mazu, Forensic Statistics

Location is Logan's Ribeye, 100 Fruitridge Avenue, Terre Haute. Meal choices are ribeye or marinated chicken.

Reservations required by Monday, September 10, contact Roy Boissy arrangements (at) asqwabashvalley.org or (812) 237-8329.

September 14 and 15, Friday and Saturday

SME Leadership Bootcamp, Columbus, Ohio

October 11, 2007, Thursday

6:00 PM Social
6:30 PM Dinner
7:15 PM Col. Scott S. Haraburda, Baldrige Criteria

Location is Logan's Ribeye, 100 Fruitridge Avenue, Terre Haute. Meal choices are ribeye or marinated chicken.

Reservations required by Monday, October 8, contact Roy Boissy arrangements (at) asqwabashvalley.org or (812) 237-8329.

SME Wabash Valley C275 Meeting Schedule

Nov. 8, 2007, Thursday Wabash meeting

Dec., 2007 TBD Wabash meeting. Tentative topic is Madrigal Dinner at Indiana State University

Jan. 10, 2008, Thursday Wabash meeting

Feb. 14, 2008, Thursday Wabash meeting

Mar. 13, 2008, Thursday Wabash meeting

Apr. 10, 2008, Thursday Wabash meeting. Tentative topic is Student Night.

May 8, 2008, Thursday Wabash meeting. Tentative topic is Challenge X at Rose-Hulman Institute of Technology.

Notes from last month' meeting

Four golfers and a total of nine people attended the joint golf outing and picnic of ASM Wabash Valley, ASQ Wabash Valley, and SME Wabash Valley. Based on the number of people indicating interest in playing, it was expected that the maximum of 20 people would play golf. Saturday morning brought a beautiful day. The Country Club of Terre Haute course was in very nice condition, as it usually is. Jack F. was the best golfer in the group, and also the most consistent. The other three of us had an occasional good shot interspersed between bad shots.

Although the level of play was not very good, it was a very enjoyable outing, and we enjoyed each other's company. After we finished 18 holes, the five other people joined us for a late lunch at the Country Club. Bill W. of Quality Council of Indiana decided to pay for both the golf outing and lunch. Thank you Bill.

Photos of Terre Haute are on page 4.

SME Member Activity

Welcome new C275 members:

Dr. Patrick Ferro
Mr. William F. Muster

Welcome new S089 members:

Siva Krishna Burra
Praveen Chandra
Raghuma Reddy Sangali
Vinodh Veerapandian

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 C275.

Question of the Month

When was the first satellite put into orbit of the earth, and what was it called?

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

Answer for June's Question

What is the difference between a black tie affair and a white tie affair?

A black tie affair means a black tie, white shirt and tuxedo for men and from a cocktail dress to a formal gown extending to the floor for women. Gloves for women are optional.

A white tie affair is the most formal of all dress codes. An example is when President Bush and Queen Elizabeth II were at a State Dinner May 7, 2007. Men wear tailcoats, white pique vests, and white ties. Floor gowns and gloves for women are the norm.

SME C275 Wabash Valley Officers for 2007

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

SME S089 Indiana State University Student Chapter Officers for 2007

Rakesh Yarlagadda, Chair
Ryan Kunkler, Chair Elect
Sajid Syed, Secretary
Kartheek Theeda, Treasurer
Surendranath Antharam, Program Committee Chair
James Smallwood, Faculty Advisor

SME headquarters contacts for 2007

Natalie Lowell, Member Relations Manager
Michael F. Molnar, Member Council Representative
F. Brian Holmes, SME President

You may send an e-mail to any of the above individuals by sending to smewabash (at) 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.

Internet Web Sites

Google is now providing free photo hosting called Picasa. Viewing of public folders is available to anyone. You must have a free Google account in order to upload your photos. You can create albums and add captions to the photos. The images can be viewed individually or in a slideshow. View a member photos at: http://picasaweb.google.com/wr2r67 More information is at: http://picasa.google.com and http://picasaweb.google.com

Kodak has a similar free photo web hosting site at http://www.kodakgallery.com Photos can be placed in albums and captions added. Viewing of public folders is available to anyone. Free membership is required to be able to add photos.

YouTube has a free video web hosting site at http://www.youtube.com Viewing of videos is available to anyone. Again, you must join as a free member in order to add videos.

myspace.com is a free web hosting site that allows members to add a variety of content types including photos, text, a blog, and comments on other members' sites. This site has become very popular with the younger generation, and provides a means of communication often within a group of friends. http://www.myspace.com

If you have a web site that you would like to share, please send an e-mail to the editor.

SME Wabash Valley, Chapter C275
http://chapters.sme.org/c275/

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/c275/asm.htm

ASM International
http://asmcommunity.asminternational.org/portal/site/asm/

Certification Corner

Information on all SME Certifications may be found at http://www.sme.org then click on Professional Development drop down menu Certification.

The SME Wabash Valley Newsletter newsletter is a publication of SME Wabash Valley, Chapter C275, located in Terre Haute, Indiana. Articles, comments or other feedback may be sent to:

Newsletter Editor smewabash (at) yahoo.com

Deadline for submitting information for the October newsletter is September 15, 2007.

Courthouse, Terre Haute, Indiana

Wabash River from U.S. 40, Terre Haute, Indiana

Guide for the Use of the International System of Units (SI)

The article for this month is a brief summary of the **Guide for the Use of the International System of Units (SI)** by B. N. Taylor (1995). This is NIST Special Publication SP811. The full document is available at: http://physics.nist.gov/Pubs/SP811/ and may also be downloaded in PDF format from a link at that site.

The International System of Units, universally abbreviated SI (from the French Le Syste`me International d'Unite´s), is the modern metric system of measurement. Long the dominant measurement system used in science, the SI is becoming the dominant measurement system used in international commerce. In the United States, The Metric Conversion Act of 1975 designates the metric system of measurement as the preferred system of weights and measures for United States trade and commerce. While many measurements in the U.S. have converted to SI, many measurements in the U.S. are still based on the English system of measurements.

4.1 SI Base Units

The SI has seven base units, from which all other units are derived.

Base quantity	Name	Symbol
length	meter	m
mass	kilogram	kg
time	second	s
electric current	ampere	A
temperature	kelvin	K
amount of substance	mole	mol
luminous intensity	candela	cd

4.2 SI Derived Units

Derived units are expressed algebraically in terms of base units or other derived units. The symbols for derived units are obtained by means of the mathematical operations of multiplication and division. Examples of derived units include the following, listed in the next column:

Derived unit	Name	Symbol
frequency	hertz	Hz
force	newton	N
pressure, stress	pascal	Pa
energy, work	joule	J
power	watt	W
electromotive force	volt	V
capacitance	farad	F
electric resistance	ohm	Ω
inductance	henry	H
Celsius	degree C	°C
illuminance	lux	lx

SP811 lists many other derived units.

4.4 Decimal multiples and submultiples of SI units: SI prefixes

SI prefixes are used to designate powers of 10 multipliers for SI units. The defined prefixes are:

Factor	Prefix	Symbol
10^{24}	yotta	Y
10^{21}	zetta	Z
10^{18}	exa	E
10^{15}	peta	P
10^{12}	tera	T
10^{9}	giga	G
10^{6}	mega	M
10^{3}	kilo	k
10^{2}	hecto	h
10^{1}	deka	da
10^{-1}	deci	d
10^{-2}	centi	c
10^{-3}	milli	m
10^{-6}	micro	μ
10^{-9}	nano	n
10^{-12}	pico	p
10^{-15}	femto	f
10^{-18}	atto	a
10^{-21}	zepto	z
10^{-24}	yocto	y

For example 3 mm = 3 x 10^{-3} m = 0.003 m and 7 kW = 7 x 10^{3} W = 7,000 W.

6 Rules and Style Conventions for Printing and Using Units

6.1.2 Capitalization. Unit symbols are printed in lower-case letters except that:
(a) the symbol or the first letter of the symbol is an upper-case letter when the name of the unit is derived from the name of a person; and (b) the recommended symbol for the liter in the United States is L. Examples:

m (meter)	s (second)	V (volt)
Pa (pascal)	lm (lumen)	Wb (weber)

6.1.3 Plurals. Unit symbols are unaltered in the plural. Examples:

l = 75 cm but not: l = 75 cms

Note: l is the quantity symbol for length.

6.1.4 Punctuation. Unit symbols are not followed by a period unless at the end of a sentence. Examples:

''Its length is 75 cm.'' or ''It is 75 cm long.'' but not : ''It is 75 cm. long.''

7.2 Space between numerical value and unit symbol

In the expression for the value of a quantity, the unit symbol is placed after the numerical value and a *space* is left between the numerical value and the unit symbol. The only exceptions to this rule are for the unit symbols for degree, minute, and second. Examples:

t = 32.5 °C but not 32.5° C or 32.5°C

l = 2.4 cm but not 2.4cm

R = 10 kΩ but not 10kΩ

Appendix A. Definitions of the SI Base Units and the Radian and Steradian

A.2 Meter The meter is the length of the path travelled by light in vacuum during a time interval of 1/299 792 458 of a second.

A.3 Kilogram The kilogram is the unit of mass; it is equal to the mass of the international prototype of the kilogram.

A.4 Second The second is the duration of 9 192 631 770 periods of the radiation corresponding to the transition between the two hyperfine levels of the ground state of the cesium-133 atom.

A.5 Ampere The ampere is that constant current which, if maintained in two straight parallel conductors of infinite length, of negligible circular cross section, and placed 1 meter apart in vacuum, would produce between these conductors a force equal to 2 X 10^{-7} newton per meter of length.

A.6 Kelvin The kelvin, unit of thermodynamic temperature, is the fraction 1/273.16 of the thermodynamic temperature of the triple point of water.

A.7 Mole The mole is the amount of substance of a system which contains as many elementary entities as there are atoms in 0.012 kilogram of carbon 12.

A.8 Candela The candela is the luminous intensity, in a given direction, of a source that emits monochromatic radiation of frequency 540 X 10^{12} hertz and that has a radiant intensity in that direction of (1/683) watt per steradian.

A.9 Radian The radian is the plane angle between two radii of a circle that cut off on the circumference an arc equal in length to the radius.

A.10 Steradian The steradian is the solid angle that, having its vertex in the center of a sphere, cuts off an area of the surface of the sphere equal to that of a square with sides of length equal to the radius of the sphere.

Appendix B. Conversion Factors Factors for conversion of units outside the SI, to values in SI are provided. The following notation is used in the tables: 3.1 E+05 = 3.1 X 10^{5} and 2.7 E-03 = 2.7 X 10^{-3}. Rules for rounding of numbers should be followed.

Some conversion factors are:

Convert from	Convert to	Multiply by
acre	m^2	4.046 873 E+03
cubic foot (ft^3)	m^3	2.831 685 E-02
cup	L	2.365 882 E-01
foot (ft)	m	3.048 E-01
footcandle	lux	1.076 391 E+01
gallon (gal)	m^3	3.785 412 E-03
horsepower	W	7.456 999 E+02
inch (in)	m	2.54 E-02
kilowatt hour	J	3.6 E+06
mile (mi)	km	1.609 344 E+00
mile per hour	km/h	1.609 344 E+00
ounce (oz)	kg	2.834 952 E-02
ounce (fl oz)	mL	2.957 353 E+01
pound (lb)	kg	4.535 924 E-01
pound-force (lbf)	N	4.448 222 E+00
pound-force foot	N•m	1.355 818 E+00
psi	Pa	6.894 757 E+03
ton, short	kg	9.071 847 E+02
watt hour (W•h)	J	3.6 E+03