

Montana Society of Engineers

A state society of the National Society of Professional Engineers



Founded 1887

Change is in the Wind

Dan Munson, PE, President

George Bernard Shaw once said, "progress is impossible without change, and those who cannot change their minds cannot change anything". This reasoning explains why many companies post job positions with the requirement that the applicant must be an "agent of change". Change is inevitable. How we adapt to it is optional.

The organization has created the Future Directions Task Force (FDTF) to assess, reaffirm, modify, or possibly even reinvent the society. The reasons are simple. NSPE cannot continue down the path that it has followed for so many years without changing to adapt to the professional environment of the time. As a service organization to engineering professionals, if NSPE does not meet the needs of its members, it will cease to exist. That is why the FDTF was created. This task force, along with the votes of all state societies across the nation, will give the NSPE Board of Directors a clear message as to where we need to be headed into the future. The National Board has promised to act on these recommendations by their July 2005 meeting.

At the NSPE national Winter Meeting in San Diego in January, all state societies will discuss and vote on the future direction that NSPE needs to take. Some of the topics that we will discuss are:

- The governing structure of NSPE
- Making NSPE more of a state-centric organization based on state's needs
- Expanding NSPE to serve all engineers, registered or not
- Determine which programs, products, and services are appropriate
- How to keep NSPE viable for the long term

Within a year, the structure and services of NSPE could look very different to what it is now. As the MSE board, we are willing to take your comments and concerns to the national meeting this January 17th. If you would like to have input into the process, please contact any of the MSE board members.

MSE's Future Direction

Regardless of what happens at the national level of NSPE, your state MSE board is committed to forging ahead with programs that we feel will affect the greatest numbers of engineering professionals in our region. Our 2005 strategic focus will be on:

- Grow the Montana Joint Engineer's Conference for 3 full days of educational tracts, attracting over 350 engineers from the region.
- Establish a Montana Engineer's premiere website.
- Grow the Montana MATHCOUNTS program to involve 450 students.
- Dissolve society and professional boundaries by fostering collaboration with other engineering societies, the MPELS board, and other design professionals.
- Continue to grow the Engineering Outreach program to Montana schools.
- Monitor Montana legislative issues for opportunities to enhance the engineering welfare and image.

As you can see, our agenda is aggressive. We have confidence that as our professional community pulls together, we can accomplish all this and more in the coming months. This is where we need your help.

We have seen time and time again that so much more gets accomplished when we pool our resources, combine our efforts, and forget imaginary boundaries. We call upon your commitment to get involved and make a difference for our region. When finds their passion and pitches in, we all win.

Growth is exciting. Change is good. As Robert C. Gallagher said, "change is inevitable - except from a vending machine".

Your Montana Society of Engineer's State Board wishes all of you a very peaceful and joyful Christmas. May you experience happiness in the surroundings of the ones you love.

December, 2004

NSPE is on the cusp of change. At the NSPE national Winter Meeting in San Diego in January, all state societies will discuss and vote on the future direction that NSPE needs to take.

Inside This Issue

Bits and Pieces.....	2
MathCounts Update.....	3
Chapter Training Materials.....	3
New PE Hall of Fame Member	4
2004-05 MathCounts Sponsors.....	4
In the Ground—Or Under Ground....	5
Approved Classes	5
A Christmas Wish	6
2004-2005 State Officers.....	6

Bits and Pieces

Sandra S. Anderson, PE, Secretary/Treasurer

Making Money Makes Money at the US Mint

The US Mint was established on April 2, 1792, and 212 years later, new things are happening there every day. You can learn more about their activities at this issue's feature web site, www.usmint.gov.

Did you know that the US Mint is one of the Federal Government's money-making agencies, in more ways than one? With over \$1 billion in annual revenues, the Mint puts their net profit after expenses into the General Fund of the US Treasury. Besides fulfilling their stated mission "to produce an adequate volume of circulating coinage for the nation to conduct its trade and commerce", the Mint pays its own way by listening to what its customers want. Collectors have made the state quarters some of the most popular coins ever struck, spurring an interest in freshening up Americans' pocket change. The 2004 American Eagle silver proof dollar coin features a "Walking Liberty" that echoes the popular design from a century ago. The redesigned nickel commemorates the Lewis and Clark Expedition and American Indians' contributions to our history. With two versions of the new nickel already in circulation, and two more on the way, the cash registers are ringing.

The Mint's site explains the different missions of each of their facilities, gives a look at past practices and their strategic business plan for the future, profiles the sculptors and engravers, and features a Collector's Corner, a Coin Library, Fun Facts, and screensavers. There is also an online catalog where you can order commemorative coins, medals, and special collectibles.

A highlight of the site is the virtual tour section, which shows how coins are actually made. The slide show has 48 images with supporting text, which trace the history of the US coinage from the first "Ye Olde Mint" in Philadelphia to its 6 modern offices. The minting process is shown in fair detail, from the initial design concept, to molding and die casting, and through actual production, quality inspection, and packaging. A sample text: "The transfer-engraving machine looks like a yellow upside-down bicycle resting on its seat. At one end, a stylus traces the large epoxy model. In between, a ratio bar is set to transfer the design to a smaller size. At the other end of the machine, a carbide tool cuts the reduced design into a steel blank, making a positive replica called a "master hub." For smooth operation, petroleum jelly and oil are used to lubricate the machine's stylus, cool the

Mark your Calendar:

**The 2005 Joint Engineers Conference will be
November 3 & 4 at the Red Lion Colonial Hotel in Helena.**

cutter and remove steel shavings. With the added lubrication, the stylus can flow smoothly over the coin model." Several slides contain links to more in-depth information. The video virtual tour is 13 ½ minutes, and offers more detail about the information shown in the slide show.

Another great feature of the site is H.I. P Pocket Change, the area designed for kids. There are links to Fun Facts (two current workers at the Philadelphia Mint are over 90 years old), games (Puzzle Mint has on-line jigsaw puzzles of the new state quarters), cartoons (follow G.W. Quarter's adventures as he is "minted"), a time machine that shows important events in US history, and Camp Coin, where Inspector Collector and his friends learn about numismatics, or coin collecting. There is an extra section for teachers, with links to downloadable lesson plans about the 50 State Quarters® Program, the Westward Journey Nickel Series™, and other coin-related subjects for Social Studies, Math, Language Arts, and Science classes. **These plans, as well as the Mint slide show or tour, could easily be incorporated into MSE members' visits to classrooms during National Engineer's Week or set up as a laptop display at MATHCOUNTS competitions.**

Why We're Here ... and Something to Shoot For

"Science is but a perversion of itself unless it has as its ultimate goal the betterment of humanity."
—Nikola Tesla, Inventor, 1856 – 1943.

Tesla explained his creative process thus: "Before I put a sketch on paper, the whole idea is worked out mentally. In my mind I change the construction, make improvements, and even operate the device. Without ever having drawn a sketch I can give the measurements of all parts to workmen, and when completed all these parts will fit, just as certainly as though I had made the actual drawings. It is immaterial to me whether I run my machine in my mind or test it in my shop. The inventions I have conceived in this way have always worked. In thirty years there has not been a single exception. My first electric motor, the vacuum wireless light, my turbine engine and many other devices have all been developed in exactly this way."

Read more about Tesla's life and achievements in "Tesla: Man Out of Time" by Margaret Cheney, "Wizard: The Life and Times of Nikola Tesla: Biography of a Genius" by Marc J. Seifer, and "The Fantastic Inventions of Nikola Tesla (The Lost Science Series)" by Nikola Tesla.

Did you know that the US Mint is one of the Federal Government's money-making agencies, in more ways than one?

Why We're Here ... and Something to Shoot For

MathCounts Update!

Dan Munson, PE, State Coordinator

MATHCOUNTS Update

We are less than 2 months away from our first MATHCOUNTS competitions. Check out the schedule below to find out when in February your local chapter competition will be held. Then call or e-mail the chapter coordinator and volunteer some time to help out with the competition. We only need a few hours of your time during that day, but it's time well spent. You will see young brain power in action, and get to see the next generation of engineers at work. We look forward to hearing from you!

MATHCOUNTS Support

If you haven't already contributed to the Montana MATHCOUNTS program with a financial donation, please consider it. Montana MATHCOUNTS is a nonprofit organization primarily supported by local engineers and engineering based companies. To keep the quality of the program high, and the middle school registration fees low, we are totally dependent on the generosity of our state engineers. We trust that you will see the benefit in helping us out. Donations should be sent directly to:

Montana MATHCOUNTS Foundation
P.O. Box 20996
Billings, MT 59104-0996

Thanks for your help and kindness.

MATHCOUNTS Contacts

North Central Chapter

Wednesday - February 9, 2005
MSU—Great Falls - Heritage Hall

Contact:

Bill Burkland, Coordinator
Phone: 406-447-5054
Fax: 406-447-5036
e-mail: bill@rpa-hln.com

Eastern Montana Chapter

Tuesday - February 8, 2005
Dawson County HS Auditorium

Contacts:

Elton Stickel, Coordinator
Phone: 406-359-7320
Fax: 406-359-7273

e-mail: elton.stickel@wbip.com

Kalispell Chapter

Friday - February 11, 2005
West Coast Center Hotel -
Kalispell, Montana

Contact:

Tom Heinecke, Coordinator
Phone: 406-752-2216
Fax: 406-752-2391
e-mail: theinecke@m-m.net

Billings Chapter

Thursday - February 10, 2005
MSU Billings - Liberal Arts

Contact:

Dan Munson, Coordinator
Phone: 406-655-2540
Fax: 406-655-2511
Dan.Munson@northwestern.com

Missoula Chapter

Thursday - February 17, 2005
Ruby's Inn - Missoula, Montana

Contact:

Guy Sharp, Coordinator
Phone: 406-273-2461
Fax: 406-273-6987
e-mail: sharpguy@amerion.com

Bozeman Chapter

Thursday - February 10, 2005
MSU—SUB, Room 276

Contact:

Jerry Stephens, Coordinator
Phone: 406-994-6113
Fax: 406-994-6105
e-mail: jerrys@ce.montana.edu

Butte Chapter

Tuesday - February 8, 2005
Red Lion Inn - Butte, Montana

Contact:

Brian Sullivan, Coordinator
Phone: 406-496-9844
Fax: 406-496-9793
e-mail: Sullivan@asimimt.com

Montana STATE MathCOUNTS Competition

Monday - March 7, 2005
MSU Strand Union Building -
Bozeman, Montana

Contact:

Dan Munson, State Coordinator
Phone: 406-655-2540
Fax: 406-655-2511

Chapter Training Materials

A few NSPE BOD meetings ago, there was talk that NSPE was developing a lending library of short presentations, available free of charge to the Chapters. These include:

- Lead a Top-Flight Meeting (Facilitation and Chairmanship Tools To Advance Your Organization and Your Career)
- The Glass Ceiling Training Video & Discussion Guide

- Gilbane-Gold Ethics Video and Study Guide
- Incident at Morales
- The Leading Edge 3-part Series (1-Leading Today's Associations, 2-The Association Chair Primer, and 3-Lead a Top-Flight Meeting)

Get more details and request information on the NSPE Website at the following link: <http://www.nspe.org/leadership/membonly/library/>

If you haven't already contributed to the Montana MATHCOUNTS program with a financial donation, please consider it.

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Harold S. “Sonny” Hanson Inducted into the Montana PE Hall of Fame

*Doug Brekke, PE, Past President and Chairman
of the Joint Engineers Conference*

The Montana Professional Engineers Hall of Fame is sponsored by the Montana Society of Engineers to honor Montana engineers who made significant contributions to the development of Montana and the engineering profession.

The late Harold S. “Sonny” Hanson of Billings was inducted into the Montana Professional Engineers Hall of Fame at the 2004 Joint Engineers Conference in Helena. A plaque honoring the inductee will be hosted at the Montana State University College of Engineering in Bozeman.

The Montana Professional Engineers Hall of Fame is sponsored by the Montana Society of Engineers to honor Montana engineers who made significant contributions to the development of Montana and the engineering profession. Previous inductees are John H. Morrison, Ben F. Hurlbut, W. Paul Schmechel, and Leland J. Walker.

Hanson graduated from Montana State College, now MSU in Bozeman, in 1950 with a bachelor’s degree in electrical engineering. He managed the Billings branch office of Drapes Engineering between 1957 and 1964. Hanson founded Con’eer Engineering in 1964 and served

as President until 1978. He founded Energy Conservation Consultants in 1978 and served as President until 1993.

During his career, Hanson worked on the electrical system design for hospitals, government buildings, schools and colleges throughout Montana.

Between 1973 and 1990, Hanson was legislative lobbyist representing the Montana Technical Council, a consortium of architectural and engineering societies. He later served four terms in the Montana House of Representatives from House District 9 in Yellowstone County.

Hanson served as State President, National Director and National Vice President of the American Council of Engineering Companies (ACEC).

He died on June 28, 2004 following an automobile accident.

Through the financial support of these corporate companies, Montana MATHCOUNTS has been able to continue to grow and reach more students in Montana.

Special Thanks to the 2004-05 Corporate MATHCOUNTS Sponsors!

Advance Silicon Materials, Inc.
Butte, MT

AlSCO Linen
Billings, MT

Ash Grove Cement Company
Clancy, MT

Blackfoot Telephone Coop, Inc.
Missoula, MT

CHS (Cenex)
Laurel, MT

ConocoPhillips
Billings, MT

**Dennis & Phyllis Washington
Foundation**
Missoula, MT

Engineering, Inc.
Billings, MT

EXXONMOBIL Foundation
Billings, MT

MDU - Montana Dakota Utilities
Billings, MT

Montana Refining Company
Great Falls, MT

Robert Peccia & Associates
Helena, MT

Smurfit-Stone Container Corp.
Missoula, MT

Stillwater Mining Company
Columbus, MT

Western Sugar
Billings, MT

Yellowstone Electric Company
Billings, MT

Through the financial support of these corporate companies, Montana MATHCOUNTS has been able to continue to grow and reach more students in Montana. These students are introduced to the wonderful world of mathematics and are able to take advantage of these skills at an earlier level making their future and ours brighter. THANK YOU!

In the Ground — Or Under Ground . . .

Dan Hogan, PE, President-Elect

I'm sure we have all experienced the mad dash to "get in the ground" that seems to challenge our profession each fall. Projects seem to languish as long as the Indian-Summer holds. With the first frost, reality sets in and the rush is on to at least have foundations before winter hits.

While in Havre this fall, I discovered how that community dealt with a similar situation after a fire burned out Main Street in 1904. Confronted with both a need to re-build and the onset of winter, the town went underground. In a creative reaction to the problem at hand, businesses and services relocated beneath the streets. The sidewalks had glass block added to allow natural light and everything from a bakery to a Post Office, to a blacksmith shop occupied subterranean structures.

In 1994 a dedicated group of locals developed displays intended to re-create the past

"downtown". They did a wonderful job. The highlights include a saloon (it is Montana after all and no town should have to function without a saloon/card house for an entire winter), Chinese laundry, butcher shop and market along with Shorty Young's office. Displays are of high quality and it is well worth the time to take the tour. If you get the chance, I am sure you will be surprised at some of the other essential functions moved underground. When in Havre, make sure and take the "Havre Beneath the Streets Tour".

It was fun to see the resiliency and resourcefulness of the Montana Pioneers and relate that to a situation that we face today. When we are feeling stressed by those deadlines and the clock is ticking, perhaps thinking of the challenges confronted and overcome with resources that pale in comparison to those of today will take the edge off and give us a sense of perspective.

Confronted with both a need to re-build and the onset of winter, the town went underground.

Approved CE Courses

Changes, Change Orders and Changed Conditions

Billings, Montana
February 8, 2005
www.lorman.com

Downtown Revitalization in Montana

Billings, Montana
February 24, 2005
www.lorman.com

Power Plant Performance Knowledge Series:

- Advanced Performance Analysis for Power
- Fundamentals of Power Plant Performance for Utility Engineers
- Combined Cycle Power Plant Performance
- Advanced Operator Training

These classes are approved courses that will be offered as interactive on-line classes. For more information and dates—visit www.gpworldwide.com or call 1-800-803-6737.

These courses are approved for credit for Montana Professional Engineers.

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- Engineering Times
- Products & Services
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Visit www.nspe.org TODAY!

***Merry Christmas and
A Happy New Year
From the MSE Office!***

The staff of the Montana Society of Engineers Office would like to wish each of you and your families a safe and happy holiday season — we hope that you are able to keep the spirit throughout the whole new year!

Just a couple of housekeeping items:

- 1) Effective January 1, 2005, the MSE office e-mail address will be mse@assoc-mgt.com
- 2) The MSE office will be closed from December 24, 2004 through January 3, 2005. Please keep these dates in mind as you approach the end of this year.

NSPE will be facing vast new changes in 2005. If you have input or would like to share your thoughts on the direction you would like to NSPE go, please do not hesitate share these with the MSE Office or one of the Board members.

Sincerely,

Connie Dempster
MSE Executive Secretary

04-05 MSE Board

Dan Munson, President

Dan.Munson@northwestern.com

Dan Hogan, President-Elect

dhogan@aegis-eng.biz

Brad Wright, Vice President

bwright@salient-tech.com

Sandra Anderson, Secretary/Treasurer

sandra.anderson@northwestern.com

Doug Brekke, Past President

DLB@5400.TV

Connie Dempster, Executive Secretary

MSE Office

PO Box 20996

Billings, MT 59104-0996

406-259-7300

406-259-4211 Fax

mse@assoc-mgt.com

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the MSE office e-mail
address will be
mse@assoc-mgt.com***