

SEAC Newsletter

Mark Your Calendar

General Membership Meetings

(Breakfast 7:30 a.m.)

January 18
March 15
May 17
July 12
September 13

Business Practice Committee Meetings

(Breakfast 7:30 a.m.)

February 8
April 12
June 14
August 9
October 11

SEAC Board of Directors Meetings

(7:30 a.m.)

February 1
April 5
June 7
August 2
October 4

SEAC Seminar

Details to follow

Annual Dinner Meeting

November 8
6 - 9 p.m.

July's General Meeting

"What the Design Engineer Needs to Know About Welding"

Our July General Meeting will feature a presentation titled "What the Design Engineers Needs to Know About Welding," presented by the 2001 T.R. Higgins Award winner, Duane Miller. SEAC is privileged to be able to present this lecture in its entirety during our normal General Meeting timeframe. Duane Miller has agreed to 'stay around and visit' following his presentation to answer questions and discuss special welding topics that the membership might have. Duane Miller's bio follows below:

Duane K. Miller, Sc.D., P.E., is a recognized authority on the design of welded connections. He is in demand as a speaker on the subject all over the world and has lectured in Asia, Africa, Europe, Australia, as well as across North America. In 1994, Dr. Miller was selected to chair the American Welding Society's (AWS) Presidential Task Group on Northridge earthquake issues. He also served on the Project Oversight Committee of SAC, a consortium sponsored by the Federal Emergency Management Agency (FEMA) to provide understanding of connection behavior in the wake of Northridge.

Dr. Miller publishes frequently in the industry press and on three occasions, has been awarded the coveted Silver Quill Award of the American Welding Society (AWS) for the excellence of his published work, most recently in 1998. In 2001, he received the American Institute of Steel Construction's T. R. Higgins Lectureship Award, which annually recognizes an outstanding lecturer and author whose technical papers are considered an outstanding contribution to the engineering literature. He has authored and co-authored chapters of many texts, including the Highway Structures Design Handbook and the Mark's Handbook of Engineering, 10th Edition. He is the co-presenter of the Lincoln Electric's Blodgett Design Seminar series, and a frequent speaker at seminars sponsored by professional groups such as AWS and the AISC. He is the Executive Director of the James F. Lincoln Arc Welding Foundation, and editor of Welding Innovation Magazine with a worldwide circulation of over 35,000.

Don't Miss Out Upcoming General Meeting

Date: Thurs., July 12 @ 7:30 a.m.

Speaker(s): Dwayne Miller,
Lincoln Electric

Location:

Renaissance Denver Hotel
3801 Quebec Street
(south of the I-70 and Quebec Street intersection)

Reservations:

Call Janet Gemberling at Martin/Martin
303-431-6100 or fax 303-431-6866 by
noon on Monday, July 9, 2001.

Dr. Miller earned a B.S. degree in Welding Engineering from LeTourneau University in Longview, Texas, an M.S. in Materials Engineering from the University of Wisconsin - Milwaukee, and was awarded a honorary Doctor of Science degree from LeTourneau University in 1997. An AWS member since he was 19, he currently serves as Second Vice Chair of the AWS D1 Structural Welding Code Committee and Chair of the Seismic Welding Subcommittee. He is a former co-chair of the AASHTO-AWS D1.5 Bridge Welding Code Committee, a member of the AISC Specification Committee, a Professional Engineer, Certified Welding Inspector and Certified Welder. He is a member of Tau Beta Pi, Sigma Xi, LeTourneau University's Gold Key Club and NSPE.

A "Question and Answer Session" with Duane Miller will follow his formal presentation.

If you have specific questions/issues that you would like addressed, please forward your questions to one of the SEAC Board Members (see page 2 for contact information) and they will get it to Duane prior to the General Meeting.

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Information for inclusion in the newsletter must be received one month prior to the next general meeting.

Shawna K. Smith
Newsletter Publisher



SEAC Updates

Professional Members

Alexander Abel
City & County of Denver
John Hickisch
Jirsa Hedrick & Associates
William Ryan
Peak Engineering, Inc.
Daniel Secary
National Energy Production Corp.
W. Andrew Stephan
Carter & Burgess

Affiliate Members

Greg Fischer
Shannon & Wilson, Inc.
Leslie Reed
Redwine-Reizian, Inc.
Scott Riley
Redwine-Reizian, Inc.

NSPE News

Salary Survey Available

The 2001 NSPE Income and Salary Survey will be available on June 15. This year, significant changes have been made to more accurately reflect the engineering profession, including an expanded list of major branches of engineering, an expanded list of job functions, information on median income by gender and origin, and specifics for more metropolitan areas.

A searchable diskette with a companion book provides the latest information on engineering salaries and allows users to select their own variables to analyze data and perform cross-tabulations among the categories in this comprehensive database. Orders may be placed online at www.nspe.org or by phone at 800-417-0348.

(continued on page 4)



President's Message

Today was Ride Your Bike To Work day. So I did. For years I've done a little of my commuting by bike. I have the luxury of living far enough from the office that a ride provides some good exercise, but not so far that only serious bikers need attempt it.

Today is probably my worst day ever for bicycle commuting. It's cold, raining, with occasional lightening and thunder, not to mention tornado warnings in the south metro Denver area. My wife called to see if I was foolish enough to ride home. I probably am. I haven't decided yet. Reminds me of one of my all time favorite songs, "Fool In The Rain" by Led Zeppelin. I can sing that to myself all the way home as I ride, echoing the thoughts of all the people in their cars who see me riding.*

Where is all of this leading? I honestly have no idea, but it is adding to the word count and could eventually result in an adequate little editorial. I'm racking my brain for some profound analogy incorporating biking, rain, Led Zeppelin and structural engineering. Sounds bizarre.

It has occurred to me while writing this inspired piece of prose that I (we) never work this way -- attempting to create something from nothing. When was the last time you sat in your office, staring at the computer screen or out the window, having "engineering block" with no idea of what to do next. We usually have the opposite condition -- a long list of tasks to perform and a short amount of time in which to complete them. So we work along at a frantic pace attempting to keep everyone happy who is expecting this work to be done.

There is a seeming nobleness in that effort, and we can derive satisfaction from it, but what about that time spent staring out the window? When was the last time you came up with a really inspired engineering solution or business idea? Are we exercising our creative abilities, or just overworking our production capability? Could it be the most valuable time we spend each year, related to our engineering careers, is time away from the office recharging and re-energizing?

Okay, the moral of the story. Are you ready? Here it is. I hope each of you has a terrific summer. Working, vacationing, exercising (physically and mentally), contemplating and being creative! Oh, and may your capacity for rational thought be infinitely greater than mine.

Ed Buteyn

P.S. The ride was fabulous.

*In actuality, while riding home, a girl driving by rolled her window down to share a word of encouragement, "Suckerrrrrrrr!!!"

Good Engineering Lasts Forever

About two years ago in my President's Message, I incorporated an interesting historical summary of the width (gauge) of a standard railroad line. I'll reprint it here for completeness, but pay attention to verse 2 that was recently sent to me by a SEAofTexas member who recently read my article and just had to comment:

Verse 1:

The U.S. standard railroad gauge (distance between the rails) is 4 feet, 8.5 inches. That is an exceedingly odd number. Why was that gauge used? Because that's the way they built them in England, and the U.S. railroads were built by English expatriates. Why did the English build them that way? Because the first rail lines were built by the same people who built the pre-railroad tramways, and that's the gauge they used.

Why did "they" use that gauge? Because the people who built the tramways used the same jigs and tools that they used for building wagons, which used that wheel spacing. So why did the wagons have that particular odd spacing? Well, if they tried to use any other spacing, the wagon wheels would break on some of the old, long distance roads in England, because that was the spacing of the wheel ruts. So who built those old rutted roads? The first long distance roads in Europe (and England) were built by Imperial Rome for their legions. The roads have been used ever since.

And the ruts in the roads? The ruts in the roads, which everyone had to match for fear of destroying their wagon wheels, were first formed by Roman war chariots. Since the chariots were made for (or by) Imperial Rome, they were all alike in the matter of wheel spacing. The U.S. standard railroad gauge of 4 feet-8.5 inches derives from the original specification for an Imperial Roman war chariot. Specifications and bureaucracies live forever.

So the next time you are handed a specification and wonder what horse's ass came up with it, you may be exactly right, because the Imperial Roman war chariots were made just wide enough to accommodate the back end of two war horses.

Verse 2:

When we see a space shuttle sitting on its launching pad, there are two booster rockets attached to the side of the main fuel tank. These are solid rocket boosters, or SRB's. The SRB's are made by Thiokol at their factory in Utah. The engineers who designed the SRB's might have preferred to make them a bit fatter, but the SRB's had to be shipped by train from the factory to the launch site.

The railroad line from the factory had to run through a tunnel in the mountains. The tunnel is slightly wider than the railroad track, and the railroad track is about as wide as two horses' rumps. So, a major design feature of what is arguably the world's most advanced transportation system was determined over two thousand years ago by the width of a horse's ass! Don't you just love engineering?

- Ben Nelson

Think About It . . .

We in the engineering profession often grumble about a universal lack of public understanding and appreciation of the good we do for society. These 'grumbles' appear to be worldwide, as witnessed by the following article emailed to me by an engineering friend in Greece. Perhaps some of you may have already seen this, but if not, enjoy:

PHILOSOPHY FROM THE LATE CHARLES SCHULZ

This is a great way to get a new week started - it puts things in proper perspective. Take this quiz:

1. Name the five wealthiest people in the world.
2. Name the last five Heisman trophy winners.
3. Name the last five winners of the Miss America contest.
4. Name ten people who have won the Nobel or Pulitzer Prize.
5. Name the last half dozen Academy Award winners for best actor and actress.
6. Name the last decade's worth of World Series winners.

How did you do?

The point is, none of us remember the headliners of yesterday. These are no second-rate achievers. They are the best in their fields. But the applause dies. Awards tarnish. Achievements are forgotten. Accolades and certificates are buried with their owners. Here's another quiz. See how you do on this one:

1. List a few teachers who aided your journey through school.
2. Name three friends or work associates who have helped you through a difficult time.
3. Name five people who have taught you something worthwhile.
4. Think of a few people who have made you feel appreciated and special.
5. Think of five people you enjoy spending time with.
6. Name half a dozen heroes whose stories have inspired you.

Easier? The lesson?

The people who make a difference in your life are not the ones with the most credentials, the most money, or the most awards. They are the ones who care about what they do, who they are and how to best set an example.

- Ben Nelson

Committee Announcements:

SEAC Wants You!

Join and be an
active member!



Membership Committee

If you have questions about this committee, please contact **Jerry Maly** at (720) 962-8688, jmaly@wje.com

WebSite Development Committee

If you have questions about this committee, please contact **Rodd Merchant** at (303) 431-6100 or **David Poe** at (303) 423-1717.

Computer Committee

Interested SEAC members should contact **Ed Buteyn** at 303-839-1963 or **John Garlich** at 303-964-7023 or **Rodd Merchant** at 303-431-6100.

Legislative Committee "Opinion"

This is not a report, as the 2001 State Legislative session is over, having defeated in committee two bills which would have licensed interior designers and plumbing engineers; instead, it is an "editorial" on future legislation which might occur this year.

I have been advised by several building officials that the Colorado Chapter of the ICBO has verbally requested that its building department members adopt the 2000 International Building Code as their model code by this October. In order for this to occur, building officials will have to assist other municipal officials in the writing of legislation adopting the 2000 IBC and all specific amendments such as snow and wind loads. Such legislation is generally in the form of an ordinance, which has to be approved by city council's and county commissioners.

Now is a time for all SEAC members to get involved in this legislative process if they desire to provide any input in the drafting of new ordinances. Since ASCE 7 is a part of the 2000 IBC, there is a real need for appropriate load values to be established. For example, there are places where the Boulder County line joins Larimer and Jefferson County where the wind velocities change abruptly from 130 mph to 100 mph, which results in a 69% reduction in wind pressure; is this a realistic situation?

(continued on page 5)

Publications for Purchase

GUIDE: Recommended Standard of Practice

price: \$15 (members) and \$20 (non-members)

Contact:

Bruce Wolfe, Structural Consultants, Inc. 303-399-5154

1997 Survey of Colorado Building Departments

price range: \$20 to \$100

Contact: Henry Lopez 303-447-2813

1971 Colorado Snow Load Report

price: \$10

Contact: Henry Lopez 303-447-2813

1999 Seminar Proceedings:

Suggested Local Standard of Practice in the Precast and Steel Industries

price: \$15

Contact:

Bruce Wolfe,

Structural Consultants, Inc. 303-399-5154



NSPE News (cont.)

NSPE Advocates Revisions to Engineering Licensure Model

In an effort to better protect the public health and safety, serve the interests and priorities of today's engineers, and encourage every engineer to become a licensed P.E., NSPE is advocating a new approach ("Model") to engineering licensure.

In July 2000, at the NSPE Annual Convention in Norfolk, Virginia, the Society's Board of Directors approved the Model. NSPE is now beginning to gather support for the Model from key organizations, with the long-term goal of having the Model implemented in state licensing laws across the country. To view the proposed Model and read a list of answers to frequently asked questions, visit www.nspe.org

Committee News (cont.)

As a second example, the City of Westminster requires that every building to be designed for Exposure C conditions, yet one-half of this city of over 90,000 people has most likely Exposure B conditions; shouldn't they amend their code to let engineers with the approval of their building officials determine the appropriate exposure?

The most important example will be the use of ASCE 7 for snow load design of roof framing elements, where the roof snow load is generally 70% of the ground snow load; this approach is currently an alternative method in the appendix of the UBC and not approved by most Colorado building officials. The big question is how the building officials will mandate the 30 psf roof snow load value which is currently used in most Front Range municipalities; will

they state that the ground snow load shall be 30 psf, in which case the roof snow load will only be 21 psf, or will they specify the ground snow load to be 42.86 psf so that the roof snow load still comes out to be 30 psf? Also, how will Denver address their current 25 psf roof snow load?

Now is the time for SEAC's wind and snow load committees to get together and possibly publish a policy or opinion which might guide the Colorado building officials to have relatively uniform requirements, particularly those between Fort Collins and Pueblo in the special wind region. If you are acquainted with any building officials or elected public officials such as council members, now is the time to be involved.

- J.C. Moore

ADAPT Seminar Discount

SEAC members will receive a \$40 discount off the listed price of the Design of Post-Tensioned Structures Seminar. The seminar is presented by ADAPT and a flyer/registration form is included in this newsletter. For more information visit www.adaptsoft.com or call 650-306-2400.



Don't forget to make your phone reservation for the July meeting by **noon** on July 9!

Call Janet at 303-431-6100

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