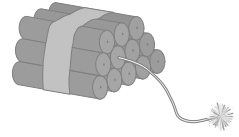


The Primer



Newsletter of the Golden West Chapter, International Society of Explosives Engineers
23633 Brewster Drive, Columbia, CA 95310

Volume 19

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Issue 4

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The Primer is published approximately four times per year on the website of the Golden West Chapter of the ISEE:

www.iseegoldenwest.org

Articles may be submitted to:

Wes Bender, editor
P O Box 645
Green Valley, AZ 85622

or to

wbender@earthlink.net

President's Message...

It has been quite a ride this past few years with the Golden West Chapter of the ISEE. We have gone through a lot, seen a lot and experienced changes to the industry that were unthinkable a few short years ago.

When I first became a member of the Chapter about 15 years ago things were sure different. At that time I was working for a US company that was in the business of manufacturing drilling equipment. At the time we never thought that could change. They decided to become incorporated in Bermuda so were no longer classed as a US based firm. Still later, management made the decision that the drill business did not fit their long range plans and they sold it off. A lot has changed in the equipment business.

The explosives manufacturing business was as diverse as the equipment business and had their share of long term manufacturers with US roots. I do not have to tell you about the changes in this industry that have occurred over the past few years.

The aggregates industry has gone through its changes. The drilling and blasting contractors have changed with the times as well. Many familiar names are no longer around, whether it be RMC or Lonestar. Even Neil Skellenger and Dick Love have moved on.

I remember with fondness the names of the people I have worked with and the fun times we had. The one great thing about the Golden West Chapter is the friends we have made, the jobs we have done and the fish we have caught. It has taken us to many interesting places and has never been dull. I am afraid that the new breed of person who is becoming involved in our industry will never be able to experience or appreciate all that the Chapter has provided us.

(continued on page 2)

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President's Message (cont.)...

As my final obligation as Chapter President I will be offering my home as the venue for the Annual Business meeting. Over the years we have had some very interesting meetings but this year will be different. It will be more of a Thank You to the Chapter. There will be no speaker or program. Just some good food, drinks and comradery. There is some business that will have to be done but it will be short. I am sorry that Gordon Coleman will not be able to attend because of another obligation. Gordon is one of those guiding lights in this industry and since he has relocated to Southern California we only get to see him at our annual fishing trip or business meeting. Since there was no fishing trip this year we will not get to spend any time with him this year.

To all who I have worked with in the Chapter I thank you. There is no need to list all of you who I care about, you know who you are. I just hope that everyone else will become involved in the Golden West Chapter in the future and continue its traditions of serving the industry in Northern California and having fun at the same time.

Best regards,
Bill Warfield

Editor's Notes...

The upcoming meeting, as usual, will be an important one for the chapter. Please try to attend. Your voice and input are needed. And while you're at it, thank Bill for serving as President for the past two years. I certainly appreciate his contribution, and so should you.

For the health of *The Primer* (and the good of the chapter), please let me know what you would like to see in the newsletter. I may start asking specific individuals to contribute. I may also start a series of articles highlighting some of our members. You might be next. I first took the editor's job in 1997 because no one else would. Through the years I've purchased additional software, asked for articles, devoted about 12 hours per issue, asked for articles, wore out three keyboards, asked for articles, and asked for articles. It seems sort of strange when I hear from someone clear on the other side of the country, but not from any of our members. (Oops, sorry Gordon. You did ask for a copy of the first supplement this year.) Of the two suggestions for articles that I've received in eleven years, one was from a member. The other was from an interested party. Four or five suggestions a year is all I ask. How about it. Let me hear from you.

My best wishes to you and yours for a Merry Christmas
and a Happy and Prosperous New Year.

Wes Bender

Shakin' It Up...

with Wes Bender

In the Fall issue of *The Primer* we discussed seismographs and remarked on how robust the newer units are. Let's go back a couple of generations and see what type of equipment was available before our time (well, before most of our times anyway).

Before the modern digital seismograph, we had battery-powered units that stored analog vibration data on magnetic tape or on film. Pre-dating these, however, the first reasonably portable unit was developed by L. Don Leet, the professor in charge of the seismology lab at Harvard. I say reasonably portable, because you have to stretch that term a bit. It required 110/120 volts AC to operate and weighed in at a whopping 65 pounds. It would have been a major undertaking to transport it carefully out into the field and set it up.

The Leet portable seismograph was listed as having a magnification factor of 50, although some have indicated that it may have been a bit lower. The lower response frequency is listed as 1 hz. Dr. Leet first developed his portable seismograph in the spring of 1945. It has been documented that four of his units were present around the Trinity site in New Mexico where the first atomic bomb was detonated on July 16th of that year.

Dr. Leet used technology available at the time to design a seismograph to record the displacements of three mutually-perpendicular axes. Modern units record in velocity or acceleration and store it electronically, however this wasn't possible at the time, so he used pendulums, light beams and mirrors and recorded displacement on photo-sensitive paper.

The motion in the two horizontal axes (longitudinal and transverse) is derived from the displacement of two horizontal-bracket pendulums. These have their upper hinge points slightly offset inward from the lower ones, thus using gravity to return the pendulum to its center position. No springs are used on these horizontal pendulums. The vertical axis uses a hinge-mounted weight that is suspended by a spring. Each of the pendulums consist of a weight mass, an arm with a mirror on the end and a damping plate. As a pendulum swings, the plate passes between opposite poles of a magnet to provide damping. (Without damping, the pendulum would continue to oscillate at its natural frequency long after the vibration had passed.) A single light source passes through prisms where it is split and directed at the individual mirrors mounted on the end of each pendulum's arm. After being reflected off of a pendulum's mirror, each beam enters a mirrored chamber where it is reflected back and forth eleven times before passing through a slot into the film cannister where it is registered on moving 70 mm Kodak photo-sensitive paper. (The reflections in the mirrored chamber provide the necessary amplification to the light beam's movement by making it longer.) A separate light beam passing through holes in a rotating disk provide timing marks on the moving film. This disk is driven at a constant speed by a synchronous motor so that accurate timing and frequency can be derived. If all of this sounds rather complicated, it is, but it works.

The Primer

Shakin' It Up (cont.)...

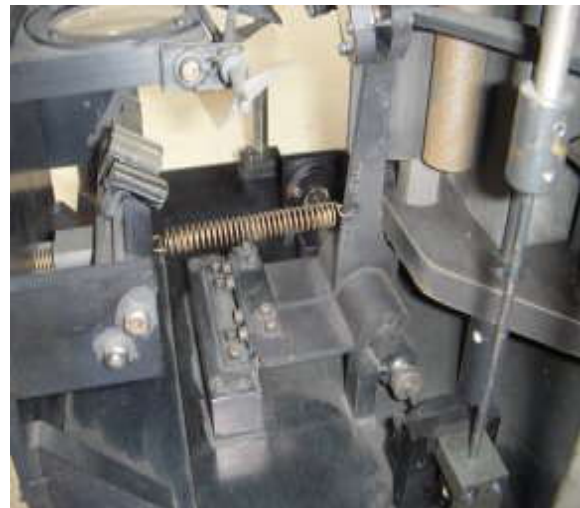
Because of the sensitivity of the mechanism, clamping screws are provided so that the pendulums can be locked in their central position during transport and storage. Also, because the vertical pendulum is subject to possible mis-alignment from elastic fatigue of the spring due to age, a tension-adjusting screw for the spring is provided and can be accessed through a small door on the side of the instrument. (See, humans aren't the only things that sag with age. We just don't have compensating screws.....) The unit has four permanent feet mounted on the bottom of the frame that are used for storage and transport only. In use, three adjustable feet are extended through the bottom to slightly raise and to level the unit.



3 outer knobs are for leveling. 3 inner knobs are pendulum locks. Door is for film cannister.



Longitudinal pendulum with hinge on left.
(Both are locked. Rusted parts are magnet poles.)



Vertical pendulum
(Mirrors can be seen at right edge and top.)



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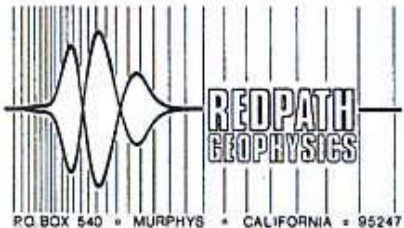
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Chapter contacts:

Bill Warfield, President	(916) 782-2275	Mike McNulty, Vice President	(916) 645-3377
Carey Haughy, Secretary	(209) 533-0127, ext 23	Gerald Fulghum, Treasurer	(916) 481-1421
Jon Hill, Board Member	(209) 505-6983	Joseph Johnson, Board Member	(530) 741-0873
Randy Messer, Board Member	(530) 741-0873	Tom Wright, Board Member	(530) 740-1105
Wes Bender, Board Member	(520) 648-3581		

The Primer

The Golden West Chapter of the ISEE announces its 2008 Annual Business Meeting and Year-end Dinner

When: Saturday, December 13th, 2008

Time: 5:30 p.m. until ??

Where: Bill Warfield's residence in Roseville

Cost: \$15.00 per person, payable at the door

Format: This will be an informal gathering of Chapter members and will include drinks, beer, wine and a catered buffet, followed by a short meeting.

Meeting Agenda: Election of Officers and Board Members for 2009,
Vote on Amendments to the Chapter Constitution and By-Laws.

RSVP: Because of space limitations, the meeting will be limited to the first 30 members who RSVP.

Contact Bill Warfield - by phone at (916) 768-9432

or via e-mail at: bill.warfield@us.atlascopco.com

(Bill will provide instructions for finding his residence)

The Chapter needs to take steps to maintain its integrity during these difficult times. Because of this, it is important that the Chapter Constitution and By-Laws be changed and your interest and participation are urgently needed. Please try to attend.

(This notice was previously sent to the Chapter membership on 11/21/08)

How Come???

Once again, The Washington Post has published the winning submissions to its yearly contest, in which readers are asked to supply alternate meanings for common words.

And the winners are:

1. Coffee (n.), the person upon whom one coughs.
2. Flabbergasted (adj.), appalled over how much weight you have gained.
3. Abdicate (v.), to give up all hope of ever having a flat stomach.
4. Esplanade (v.), to attempt an explanation while drunk.
5. Willy-nilly (adj.), impotent.
6. Negligent (adj.), describes a condition in which you absentmindedly answer the door in your nightgown.
7. Lymph (v.), to walk with a lisp.
8. Gargoyle (n.), olive-flavored mouthwash.
9. Flatulence (n.) emergency vehicle that picks you up after you are run over by a steamroller.
10. Balderdash (n.), a rapidly receding hairline.
11. Testicle (n.), a humorous question on an exam.
12. Rectitude (n.), the formal, dignified bearing adopted by proctologists.
13. Pokemon (n), a Rastafarian proctologist.
14. Oyster (n.), a person who sprinkles his conversation with Yiddishisms.
15. Frisbeetarianism (n.), The belief that, when you die, your Soul flies up onto the roof and gets stuck there.
16. Circumvent (n.), an opening in the front of boxer shorts worn by Jewish men.

(I'm going back to bed now. It ain't safe out there today.....)