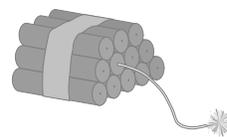


The Primer



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

Volume 20

Fall 2009

Issue 3

In this issue . . .

Co-Presidents' Messages...
page 1

Tony Serpas...
page 5

Sponsors Ads...
page 6

Shakin' It Up...
page 9

How Come???
page 11

The Primer is published 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

wbender@frontier.com

Co-President's Message...

Bill Warfield -

As 2009 winds down I was looking around and wondering.....
When I first started to get involved in the Golden West Chapter we had Seminars at the Red Lion in Sacramento where we had 75 people show up. The purpose of these Seminars was for education. We had presentations on the "new" hydraulic top hammer drills, computer optimization of drilling and blasting programs to name a few topics. There was a program on electric blasting put on by Don King in Columbia. We had a whole day on electronic detonators hosted by Kaiser Aggregates at the Permanente Quarry. The Golden West Chapter did a good job in educating its members on new and evolving technology. I wonder why we can't do that anymore.

The roster of the Golden West Chapter included drill and blast contractors, quarry blasters, representatives from drill manufacturers and all of the explosive distributors and their dealers. I wonder where they are today.

The Golden West Chapter has been an organized Chapter for 22 years. In the early days we had many young members. We had blasters who were trying to learn their profession, engineers who had the education but needed to the exposure to the working operations offered by the membership in general and members from the industry who just wanted to learn about the explosives industry and what the ISEE had to offer. I know that the younger members then have gotten older but I wonder where the young members are today.

One of the main issues that the ISEE has to contend with in the future is the government regulation. I used to call on a drill/blast contractor who could never have the time to see me unless it was at 6:00 a.m. on a job site. I know that I was just incidental labor but I ran a tamping pole, set up primers and helped tie in the shot. I learned a lot from him that I can still use. Today you can not get close to explosives unless you have been checked out by the ATF and the Department of Homeland Security for starters. I wonder if that has taken some of the interest out of younger members.

(continued on page 2)

The Primer

Bill Warfield continues:

During my time as a member of the Golden West Chapter I met many of the Cal-OSHA people who were responsible for keeping our industry safe. We have had, and continue to have, some of these people as our members and officers. Unfortunately, we have no actively employed members today. We have been able to learn from their experiences and adapt our way of doing business to the way the regulatory rules were being enforced. That was an invaluable part of the Chapter's history. I wonder why we don't have their involvement today.

At one time the Golden West Chapter had a succession plan for officers. We knew who was going to be the President in 3 years as we had a Treasurer/ Secretary, Vice President and a Board of Directors who were involved in the operation of the Chapter. I was honored to be the President for the 10th Anniversary of the GWC. I have been an officer for too many of those years. I don't have to wonder why I am tired.

I have looked over the previous history of the Chapter and wondered why we are not better today from what we had to build on. It can not all be blamed on Government Regulation, consolidation of the manufacturing industries, or even on the down turn in the economy. Those are all factors but I believe that the main problem is that too few people care about the state of the industry. The workshops and seminars were held on Saturday and we had overflow crowds. People wanted to come and learn to expand their own knowledge and how they, as individuals could grow and improve themselves and the industry. I can not say that people today are not interested in learning or growing but not on their own time. They expect the learning to go on during their normal working hours. If I am wrong please educate me so I don't have to wonder any more.

The students at the Mackay School of Mines at UNR are interested in joining into an affiliation with the Golden West Chapter to have a Student Chapter of the ISEE. It would be a Student Chapter that combines the efforts of the SME/NSSGA and ISEE. They are a small group but an interested group. I won't wonder about them.

As we go into 2010 I wish all of you a great year. Get involved with the industry, your company and most importantly your family. Be safe in everything you do. Learn about the regulations affecting your future or you might wake up one day and not have a job to go to. I hope to see you in the coming year. Thank you for your support and friendship.

Sincerely,

Bill Warfield

Co-President's Messages...

Wes Bender:

If it sounds as if Bill is a bit frustrated by the current state of affairs of our chapter, it's because he experienced the salad days of the chapter's growth and he is understandably disappointed with the current situation. I share some of his frustrations, but I still believe, as does Bill, that the chapter can serve a useful purpose. To do so, however, will require a little work on the part of everyone involved. If you look back at how our early growth was achieved, a lot of it came about because the chapter had quite a few goodwill ambassadors out there circulating throughout the chapter's territory. Most of these were in the form of salesmen and tech reps, many from the explosives suppliers, but also from other industries. They were constantly on the lookout for blasters and industry-related people who would benefit from membership in the chapter. Blasting contractors also felt that many of their employees should avail themselves of what the chapter had to offer. My personal belief is that we had more blasters around back then too. Life was good.

Today we don't have as many of these people circulating, and most who are, have been somewhat lax in promoting the chapter to prospective members. I'm not trying to take anyone to task with these comments. Rather, it is intended to encourage those members who do make contact with industry personnel to take the time to discuss the benefits of chapter membership with them. Those of you who are in the blasting business probably have newer employees who would also benefit from chapter membership. Not only from the workshops that we conduct, but also in the sharing of experiences with other blasters. It should be the goal of each and every one of our members to bring at least one new member into the chapter each year. It's only in this manner that we can find the new blood who will eventually be tomorrow's chapter leaders.

Some of you who are reading this newsletter are doing so because you are on our list of Interested Persons and have been notified via e-mail that a new newsletter issue was posted to our website. Some of you, but not all, are members of the ISEE. We would cordially invite you to join with us in the future. We are happy to continue to keep you on the list, but we'd much rather see your smiling face at one of our functions. (Rest assured that we don't share our lists, membership or otherwise, with anyone.)

With today's economic crunch, especially in California, it is doubtful very many of you can find the necessary funds to attend the 2010 ISEE Conference in Orlando in February. If any of you are planning to attend however, the chapter would appreciate it if you would consider attending the Chapter Management Workshop on Sunday, February 7th from 7:30 a.m. to 10:15 a.m. on our behalf. Breakfast is included in the workshop and it won't cost you a dime. If you can help in this manner, please contact either me or our Secretary, Carey Haughey, so that we may reserve your spot at the workshop. Thanks in advance.

The 2011 ISEE Conference, however, is another matter. It will be held in San Diego and should be close enough for many of you to attend. I'll be going over there for sure. I would propose that we develop a flyer describing the Golden West Chapter, including an invitation to join and an application. It would probably prove beneficial to have a professional job done on such a flyer. We should also make sure that sufficient copies of our latest newsletter (at that time) are available to prospective members.

(continued on page 4)

The Primer

Wes Bender continues:

The Al Colflesh Memorial Library, the official library of our Golden West Chapter, is in the process of being moved to a new location at Syar Industry's Lake Herman Quarry. When the move is complete we will advise you. For the past several years, the library has been located at CalOSHA's Mining and Tunneling unit offices in Sacramento. The Chapter would like to thank the folks at M&T for acting as the library's caretaker. Your assistance is greatly appreciated.

The Chapter officers and Board are in the process of arranging the annual business meeting. Details will be announced as soon as they are known. We will have a slate of officers and Board candidates in place prior to the meeting. Even though we will accept nominations from the floor, you can now attend without fear of being railroaded into some office or position that you do not want. We've also tried to avoid any conflict with other organizations, but that can be difficult this time of year. When it is announced, I hope that you will attend. Come out and meet your fellow Chapter members. For those of you who are not chapter members, this would be an excellent opportunity to find out what we are all about.

Gordon Coleman tells me that the annual Blaster Refresher Training Seminar, sponsored by Alpha Explosives, will be held on February 1st through the 3rd. For any of you blasters whose license will be coming up for renewal next year, this is an excellent refresher program and you should put it on your calendar. As usual, CalOSHA will conduct testing (for renewals only) on the third day.

I keep the chapter website updated regularly and recently added a few more features. On the LINKS page I added links to several of the other chapters' websites, in particular, those sites that are being kept current and that function properly. I also added a link to ISEE's Technical Information Central. TIC allows you to search the ISEE's database of abstracts of published papers. It also provides for a search of the abstracts of the U. S. Bureau of Mines' Reports of Investigations (RIs) and Information Circulars (ICs). While you can only view the abstracts and can't see the complete publication on the TIC, if you find one you want, it can be ordered through the ISEE Blaster's Library. Good service. Check it out.

Plans are also underway for the Chapter to present a training workshop this coming spring. Hopefully, we will have the details worked out in time to be included in the next issue of The Primer.

Hope you all have a Happy Thanksgiving.

Wes Bender

The Explosives Industry in California Loses a Friend

On November 7, 2009, Tony Serpas passed away from complications associated with back surgery.

Tony served in the Mining and Tunneling Unit of CalOSHA since April of 1999. He was better known to explosives people in southern California, but he had an impact on all of us. He worked as an Associate Safety Engineer in all three Southern California offices of the unit, and was the senior in Van Nuys since May of 2003. Prior to his DOSH service, he was a motorcycle patrolman for the California Highway Patrol for 13 years. His specialty was helping people, and many of us were beneficiaries of that gift.

Tony is survived by his wife, Topsey, and children Debby and Cindy. He will be missed by all who had the pleasure to know him. Tony's service was held in Bakersfield on November 13, 2009. Cards or letters of condolences may be sent to Topsey Serpas, 513 Day Avenue, Bakersfield, CA 93308.

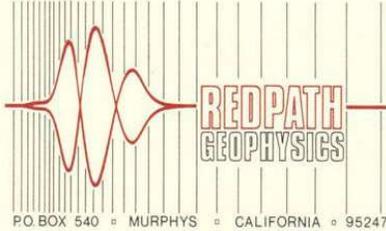
(We wish to thank Jerry Fulghum, Gordon Coleman and DOSH for providing us with the information on Tony. Our condolences to his wife and family. We're all richer for having known him, but now considerably poorer by his loss.)

The Primer



Bill Warfield
Product Manager-Ground Engineering Products

Atlas Copco Construction Mining Technique USA LLC
1708 Monte Bell Court Cell: 916-768-9432
Roseville, CA 95661 Fax: 916-772-0548
www.atlascopco.us.com Bill.Warfield@us.atlascopco.com



REDPATH
GEOPHYSICS

P.O. BOX 540 • MURPHYS • CALIFORNIA • 95247

BRUCE REDPATH

209-728-3705

ENGINEERING GEOPHYSICS • BLAST DESIGN & PHENOMENOLOGY



Matheson Mining Consultants, Inc. dba **Wesley L. Bender & Associates**

2801 Youngfield St., Suite 171, Golden, CO 80401-2266 (303) 456-5638
toll free (888) 456-5638 e-mail: service@mathesonmining.com

Blast Consulting Services
Sales of new and used Instantel Seismographs & Accessories
Instantel BlastMate and MiniMate Plus Leasing (long and short term)

EXPLOSIVE & DRILLING SERVICES



SPECIALIZING IN DRILLING BLASTING AND ROCK BOLTING SYSTEMS



Neil's Controlled Blasting, L.P.
GENERAL ENGINEERING CONTRACTOR
LICENSE No. 797732

DON BELDEN
President
(916) 663-2500

P.O. BOX 749 FAX: (916) 663-2507 MOBILE: (916) 240-8759
NEWCASTLE, CA 95658 HOME: (530) 389-8906 EMAIL: dbelden@neilscontrolledblasting.com

MINI-SEIS SEISMOGRAPH
ECONOMICAL - POWERFUL - RUGGED

- ◆ External Printing Capabilities
- ◆ Complimentary Data Analysis Software




WHITE INDUSTRIAL SEISMOLOGY, INC.
www.whiteseis.com
800-641-4538



MUNICON CONSULTANTS
Construction Instrumentation

- Economical Remote Monitoring From Our Offices.
- Vibration Monitoring: Piles, Demolition, Blasting.
- Settlement Platforms, Inclinometers, Tiltmeters, Piezometers, EL Beam Sensors
- Pre-Construction Damage Investigation Photos

San Francisco Office 415-641-2570



CHARLIE M. POLLARD
Marketing Director

12225 GREENVILLE AVE., SUITE 750
DALLAS, TX 75243
800-766-6235 • 972-644-0434 EXT. 21
FAX: 972-644-0424
E-MAIL: CPollard@lancer-ins.com
WEBSITE: www.nobellancer.com

- A MEMBER OF THE LANCER INSURANCE GROUP -



www.alphaexplosives.com

**DISTRIBUTOR OF A
FULL RANGE OF EXPLOSIVES
AND ACCESSORIES**

**EXPLOSIVES STORAGE
MAGAZINES
ATFE Type 2, 3, & 4
Custom fabrication available**

BLASTING SERVICES

**BULK DELIVERY SERVICE
ANFO, MINI-PRILL
TITAN EMULSION™
FRAGMAX™
FRAGPAK™, SMALL DIAMETER**

**DRILL BITS, DTH HAMMERS
& STEELS**

**SAFETY TRAINING
INCLUDING OSHA & MSHA**

*Lincoln, CA (916) 645-3377
Mojave, CA (661) 824-1356
Plymouth, CA (209) 245-6977*

Major Credit Cards Accepted



**ENGINEERING
SEISMOLOGY**

BLAST CONSULTING

VIBRATION MONITORING

PRE-BLAST SURVEYS

SEISMIC REFRACTION

RIPPABILITY STUDIES

Contact: Mr. Alan "Bob" Mutchnick, RG, CEG
Director of Engineering Seismological Services
Phone: (949) 888-6513 Email: bmutchnick@gmugeo.com
23241 Arroyo Vista, Rancho Santa Margarita, CA 92688
www.gmugeo.com



The World's Most Trusted Vibration Monitors

Purchase, lease or rent our industry-leading vibration monitors through a national network of qualified dealers.

**Your local Instantel Dealer:
Matheson Mining Consultants Incorporated**

Contact: Colin Matheson
Telephone: (303) 456-5638
Toll Free: (888) 456-5638
Fax: (303) 456-5639
E-mail: colin@mathesonmining.com



www.instantel.com

Corporate Office: 309 Legget Drive, Ottawa, Ontario K2K 3A3 Canada
U.S. Office: 808 Commerce Park Drive, Ogdensburg, New York, 13669 U.S.A.
Toll Free: 1.800.267.9111
Telephone: 1.613.592.4642
Fax: 1.613.592.4296
E-mail: sales@instantel.com

Certified to the ISO 9001 Quality Standard

The Primer



W.A. Murphy, Inc.
EXPLOSIVES DISTRIBUTOR

RANDY L. SPENCER
Northern California, Site Manager/Sales

Local Office:
P.O. Box 548
Copperopolis, CA 95228
Office (209) 785-4996 • Fax (209) 785-4995
Cell (209) 743-9561
rspencer@murphypowder.com

Main Office:
P.O. Box 4607
El Monte, CA 91734-0607
(626) 444-9271
(626) 575-2848 Fax

R. Tom Watts
President




*Explosives Handling Equipment
Since 1957*

TREAD CORPORATION
www.treadcorp.com

176 EastPark Drive
Roanoke, VA 24019
540.982.6881 work
540.344.7536 fax
twatts@treadcorp.com



Randy Messer
Ca License #906358 - Nv License #0069140

2689 Hwy. 20
Marysville, CA 95901
randyblast@aol.com

Phone (530) 741-0873
Fax (530) 741-0876
Mobile (530) 713-9964

24-Hour Emergency Service

**EXPANDING GROUT...
NON-EXPLOSIVE!**



Ca License #906358 - Nv License #0069140

**For Demolition, Construction
and Controlled Cutting**

A silent demolition agent which is consistent
and safe, with no noise, vibration,
ash, toxic gases or residue.

• Meets OSHA environment regulations •

24 - HOUR EMERGENCY SERVICE
(530) 741-0873
MOBILE
(530) 713-9964

QUALITY YOU CAN AFFORD



McRoy Sauls
Birmingham, AL USA
Toll Free 800-749-2477
205/592-2466 Fax: 205/592-2477
sales@nomis.com www.nomis.com

Service You Can Depend On

Chapter contacts:

Bill Warfield , Co-President	(916) 782-2275	Wes Bender , Co-President	(520) 648-3581
Carey Haughy , Secretary	(209) 533-0127, ext 23	Gerald Fulghum , Treasurer	(916) 481-1421
Sandy Figuers , Board Member	(925) 606-8595	Joseph Johnson , Board Member	

Shakin' It Up

with Wes Bender

In the last issue we discussed the use of **Perimeter Control** or **Ground Control** to prevent damage to structures where the use of a vibration criteria would not be appropriate. We didn't go into much detail for designing blasts using perimeter control. We'll provide a bit of that in this article.

We preface our remarks with the usual caviats. You should not design nor load a blast using methods described in this article if you do not have the necessary experience or qualifications to do so. In addition, because neither the author nor the Golden West Chapter have control over the conditions under which this information may be used, you understand that you accept any and all risk in doing so. It is also advisable to conduct one or more test blasts in safe areas before you undertake to blast near any structure, and to use the information gained from such test blasts in the design of any subsequent blasts. The blaster in charge takes full responsibility for the results obtained.

In selecting explosives to be used in blasts that are in close proximity to any structure, it is best to avoid the use of free-flowing explosives. It is difficult to control quantities loaded because one normally loads free-flowing explosives to a specific level in the hole, hence you are loading by volume rather than weight. It is just too easy to overload a hole with free-flowing explosives. Additionally, some free-flowing explosives such as ANFO are efficient mainly because they generate a large volume of gas. Expanding gas, while necessary to help fracture and heave rock in many other types of blasting, can result in excessive heave and backbreak for Controlled Perimeter blasts.

Cautious blasting, using either pre-splitting or smooth-blasting is a form of Perimeter Control. Pre-splitting uses a large burden and closely-spaced holes that are large in diameter compared to the explosive charge contained therein. The goal is to propagate a crack through the row of holes. The resulting crack tends to stop radial cracking from production blast holes, providing that they are not overloaded. The crack also vents expanding gasses to assist in preventing excessive heave.

For pre-splitting, start with a test blast in a safe area. If using detonating cord, it is usually preferable to start with a low figure such as 75 grains per square foot of shear area. If this is insufficient to crack the rock, the holes will still be available to be re-loaded after they have cooled. (50 grains per square foot will usually only crack the weakest rock. 200 grains per foot will almost always result in severe flyrock in cases with insufficient burden.)

When using explosive cartridges for pre-splitting, either string-loaded or with spacers, a charge density of somewhere in the range of 0.07 lbs per square foot to 0.15 lbs per square foot is usually required. Test blasts using 0.10 lbs per square foot of perimeter area would be a reasonable starting point, with adjustments made based upon the test blast results.

(continued on page 10)

The Primer

Shakin' It Up (cont.) ...

Holes for pre-splitting are usually 2-1/2 to 3 inches in diameter and drilled on 18 to 24 inch spacing, depending upon the quality of the rock to be pre-split. In lesser quality rock, you may need to place them closer or even need to drill interim un-loaded holes to achieve the desired results. Test blasts are quite valuable in determining the optimum spacing.

Smooth-blasting, where the holes are fired after the production holes, could even apply to other situations where you are only detonating a single row of holes with light charges and small burdens. The reason for using small burden distances is to provide for easy and immediate movement of the burden to prevent gas buildup that could extend cracks into the rock on the side to be protected. Unfortunately, minimum burdens will usually result in excessive throw or fly-rock. To contain this, proper covering must be used. In the case of the trench being blasted immediately adjacent to the foundation corner of the brick building (as described in the previous issue), each blast of a few holes was only partially mucked out. The face was clear, but muck was left in place several feet down the trench from the holes being detonated. The remaining void was covered with blasting mats. In open country, this may not have been necessary, but we had water treatment plant facilities all around the blast site and couldn't tolerate any flyrock. We used extremely low powder factors for each hole, although the overall powder factor for the entire trench was quite high because we had a lot of holes with very small burdens. I had the opportunity to test a few small shots well before approaching the building, so I knew how much we could load. It should be pointed out that some of the blasters involved thought I was being too cautious, but their neck wasn't on the line. After blasting had proceeded well past the building and the trench blasts began to take on a more normal character, they came to realize that a bolder approach might have gotten them in trouble.

When trenching in close proximity to an existing pipeline, one should start out conservatively and only increase the powder factor after test blasts show that it can be done safely. When changes in geology are encountered, additional test blasting should be accomplished. Trench blasting usually requires a slightly higher powder factor than normal bench blasting because the rock is more difficult to break loose. It has a greater degree of "fixation". (The closest you may come to a high degree of fixation in normal quarry blasting is if you blast into a corner with an included acute angle.) In pipeline situations, you normally cannot directly view the impact on the buried pipe, hence the desirability of limiting backbreak through measuring the surface cracks that extend from the blast toward the pipe.

Remember that every situation will require a different approach. The only hard and fast rule in blast design, is that **there are no hard and fast rules in blast design**. You have to evaluate each situation carefully and design accordingly. Start with conservative designs in your test blasts. Whatever you do, don't guess at it and then cross your fingers, hoping for the best. That approach has ruined many an otherwise good blaster.

How Come???

A few words to live by:

Alcohol has been known to loosen the bounds on creative data analysis.

Experience can be a hard teacher, but a fool hath no other.

Chance favors the Prepared Mind.

How about this situation???

Curtis & Leroy saw an ad in the Starkville Daily News in Starkville, MS. and bought a mule for \$100. The farmer agreed to deliver the mule the next day.

The next morning the farmer drove up and said, "Sorry guys, I have some bad news, the mule died last night."

Curtis & Leroy replied, "Well, then just give us our money back."

The farmer said, "Can't do that. I went and spent it already."

They said, "OK, then just bring us the dead mule."

The farmer asked, "What in the world ya'll gonna do with a dead mule?"

Curtis said, "We're gonna raffle him off."

The farmer said, "You can't raffle off a dead mule!"

Leroy said, "We shore can! Heck, we don't hafta tell nobody he's dead!"

A couple of weeks later, the farmer ran into Curtis & Leroy at the Piggly Wiggly grocery store and asked, "What'd you fellers ever do with that dead mule?"

They said, "We raffled him off like we said we wuz gonna do."

Leroy added, "Shucks, we sold 500 tickets fer two dollars apiece and made a profit of \$898."

The farmer said, "My Lord, didn't anyone complain?"

Curtis said, "Well, the feller who won got upset. So we gave him his two dollars back."

Curtis and Leroy now work for the government.

They're overseeing the Bailout Program.

Scary, isn't it.