

FROM THE OTHER SIDE

A column by Lee Lawyer with stories about geophysics and geophysicists

Gerhard Keppner sent me timely notes some time ago about a celebration that happened in August. Recall that Gerhard wrote an excellent article on Ludger Mintrop, which can be found on the DVD titled *Reflections in the Field* under the general heading of "Profiles in Geophysics." If you don't have a copy of the DVD, you can get one from SEG for a nominal fee (US\$25) or you can look the article up on the SEG Web site or you can dig up a copy of the September 1991 issue of *TLE*. I recommend the DVD. You will need a computer because the profiles are in PDF files.



In any case, Gerhard recently sent the following information regarding an important anniversary for exploration geophysics:

In your FTOS of October 2002, one could read: "As an aside, one of Mintrop's early attempts at recording seismic waves used a four-ton steel ball dropped from a height of 14 m. That must have made a heck of a thump, speaking of thumpers." These attempts took place in 1908. About 98 years later, on August 21 at 12 o'clock, the minister for economic affairs of Lower Saxony, Mr. Walter Hirche, will repeat this test in Goettingen during a celebration honoring Mintrop and Gauss and other heroes of geophysics and early seismology like Wiechert, Geiger, Gutenberg, Zoeppritz, Herglotz, Angenheister, and others. The society Wiechert'sche Erdbebenwarte Goettingen e.V. will organize this event. The repairs of the crumpled derrick were enabled by the Robert-Bosch Foundation. Dr. Udo Wedeken, who is responsible for a smooth run of the celebration, confessed that several frustrating tests were tried until two successful drops could be made. And with a sigh he said, "Mintrop must have done a lot of hard work 98 years ago." I persuaded the great man's granddaughter Dr. Angelika Mintrop-Aengevelt and grandson Dr. Ludger Zangs to take part in the celebration.

I asked Gerhard what Wiechert'sche Erdbebenwarte Goettingen e.V. stood for. His answer was succinct. "The strange German words mean: Wiechert's earthquake observatory in Goettingen (registered society)." A few years ago, Gerhard sent me a novel he had written. It had to do with a seismic crew in the desert. The language was German. He wrote, "Lee, I know you can't read German. Never mind. Learn it!" Nein, Gerhard, I still haven't read it. He expanded on the reprise of Mintrop's early experiment with the following (in English):

Earlier I wrote that the steel ball would be dropped about 98 years after Mintrop's first attempts. That's not correct. It would happen exactly 98 years later on August 17. A poetic mind could say that Mintrop's action was the "big bang" of applied seismics (seismology, I know you prefer. And Charles C.

Bates might say that that was a lousy beginning!). A rumor says that some hundred students had to lift the steel ball to the height of 14 m. Actually, the ball was lifted not by the hundred students but with a block and tackle. The celebration took place as scheduled with many speeches and demonstrations in the presence of Mintrop's grandchildren. The ball dropped every full hour and the seismic results were recorded.

And he followed that note with another:

In J. Meyer's article "Künstliche Bodenerschütterungen mit der Mintrop-Kugel" (Artificial shockwaves by the Mintrop ball) in the special print *Zur Geschichte der Geophysik* (*On the History of Geophysics*, edited by H. Birett, K. Helbig, W. Kertz, U. Schmucker and published by Springer-Verlag in 1974), you can find some useful information. The ball hit the hard and solid Trochiten limestone in a deepening (to remove the soft overburden). Recording was done by a portable Wiechert horizontal seismograph. For his further investigations Mintrop built and used his own portable system, based on Wiechert's apparatus. You can find a drawing of Mintrop's seismograph in the article with a detailed description. It was used for each ball-test, i.e., a single recording channel. A recording was carried out at different places in the area for subsequent shots. The setting up of the seismograph was done in less than a quarter of an hour. Only the horizontal components could be recorded. Not until some years later would Mintrop construct a portable and very sensitive vertical instrument, probably the first step to his later, so successful field seismograph.



(left) Angelika Mintrop-Aengevelt with daughter and Ludger Zangs. Both the original four-ton ball (bottom right) and the original tower (bottom left) (restored and reinforced) were used to commemorate the 98th anniversary of one of Mintrop's early attempts at recording seismic waves.



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Meyer writes: "The photographic registration of the Goettingen fall-tests led to the first complete seismograms of artificial earthquakes ever recorded and published."

When I first looked at pictures of the event, I marveled at the huge hole that the four-ton ball made when dropped but was relieved to read that the hole was hand dug (probably by 100 students) to get to bedrock. We know today that thumping on bedrock is not the best way to couple to the Earth. Give me some overburden any day.

It is great that the anniversary was celebrated in this manner. Both the original four-ton ball and the original tower (restored and reinforced) were used for this event. In fact, both are listed as monuments. The 1908 experiment was clearly a forerunner of modern exploration geophysics. Think 1908! No radio! No electronics! Very few cars! No computers! No TV! No toasters! How did they survive?

SEG has awards named for Fessenden, Ewing, Karcher, Kauffman, and Green but none for Mintrop. SEG's "founding fathers" had no difficulty in recognizing his contributions. In 1930, SEG's first year, they made Mintrop one of the first two honorary members.

Mike Burianyk and I extended a challenge to members to comment on suggested changes to the membership rules. Mike is on the Global Affairs Committee and has expressed some rather controversial ideas regarding membership requirements. (See May 2006 *TLE* and my response in FTOS in June). Tim Berge, a former GAC chairman, now adds his perspective to the discussion.

First, I would like to begin with the fact that I appreciate the work both of you have done for our profession and membership and also care very deeply about these issues. It has been very interesting to see globalization progress within the SEG, and I think it benefits all.

We are not a democracy, never were. Such political rhetoric about "democratic" ideals and expectations need not apply. Nevertheless, Mike has pointed out some inequities which we should either accept or try to fix. We have to make the idea of an egalitarian scientific and professional society (which is what we really are) a reality.

I value my SEG Active Membership and see no reason to compromise its requirements nor do I wish to depreciate its value. There is no need to change the rules, just make the dues structure fair for everyone and make it a fairly simple and easy thing to join, no matter where you live or work or how much you may earn — as long as you are a geophysicist. You want more global voters? Get them to be active members.

Despite the inherent inequity of a two-class system, I think the Associate Membership serves a good purpose in introducing students to SEG and providing an entry-level participation with entry-level credentials. Fair enough.

The other part of this membership issue is that so many of our Associate Members do not become Active Members when they are qualified to do so. I like Lee's suggestion of a year's free Active dues as a good "nothing to lose" incentive. I would support some kind of open enrollment for qualified associates or consider any other sort of arm-twisting. And let's encourage support of the global membership and make sure these qualified global members get a vote too. We are an organization on the progress of transition to true globalization but have much to do to complete the task. In conclusion, I like a little about what you both have to say but despite the notion that I may not completely agree, I look forward to continued dialog and change in this regard and obviously support and encourage the efforts of the GAC.

Thanks for your comments, Tim. Since the earlier discussion, the SEG Executive Committee proposed bylaw changes for Active Membership, which were approved by the Council in New Orleans. The new rules require anyone vying for Active Membership to get at least three references with at least one from an SEG Active Member. Others may be from equivalent members from allied or cooperating associated societies, geoscience employers (present or past), or authors of technical papers in publications of allied or cooperating associative societies. This change loosens the requirements for references but I don't think it will motivate many Associate Members to upgrade to Active, which started all of the suggestions for change. [TJE](#)