Surveyor Olympics Provides Diversion at Summer Meeting

MSPS Past President Peter Blethen was one of many attendees at the 2008 Summer Meeting who participated in the “Surveyor Olympics.”

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“The liberty of the press shall forever remain inviolate and all persons may freely speak, write and publish their sentiments on all subjects, being responsible for the abuse of such right…”

— Minnesota Constitution

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About the Cover

A fun new component of this year’s MSPS Summer Meeting was the Surveyor Olympics. Past President Pete Blethen is shown on the cover; Pete won one of the five events. The complete list of winners appears on page 39 of this issue.
From The President
David S. Landecker

Summer Meeting Recap — and Looking Ahead
I just returned from the MSPS summer meeting at Arrowwood Resort in Alexandria and it was an outstanding event organized by the Chapter 5 members. Picking the meeting date more toward the middle of the summer certainly paid off, as we enjoyed spectacular summer weather. The chapter arranged for a legislative review and prevailing wage update by Nancy Haas of Messerli & Kramer and MSPS committee chair Dan McAninch, and there was a continuing education venue that was well-attended and very informative. Had it not been for the golf, shooting and shopping, I know most of the attendees would have liked to have extended the session to hear more on “Is it a road?” put on by attorneys from Rinke Noonan of St. Cloud. The MSPS Board of Directors (BOD) and I would personally like to thank Chapter 5 President Jay Wittstock and all of the chapter members and committee volunteers that made this meeting such a great success.

The MSPS BOD meeting was held on a Thursday morning as a kick-off to the summer meeting. There was much discussion about the many matters that face our society. Along with the board, several guests and committee chairs were present during our deliberations. The board approved the 2008-2009 budget presented by President Elect Lowell Schellack and the budget committee. This year’s budget will once again manage our society’s financial obligations without increasing dues. Having the budget approved early in the year will allow the BOD to concentrate on more operations content at the fall planning session.

The Public Relations committee is currently producing its second brochure regarding careers in land surveying. Chair John Chaffee and his committee are honing the brochure’s text and working visuals into the design layout. The goal of MSPS is to have the draft completed by the fall BOD planning meeting in September and, after comments and reviews, publish the first set by the MSPS annual meeting. I know the committee will be looking for input from members in the form of pictures and will anticipate that all of us participate in a photo contest. Watch for additional details in an upcoming issue of the magazine.

Our Education committee, headed by Chairman Denny Pederson, has been busy following developments at St. Cloud State University (SCSU) and the hiring of two new professors to work with the land surveying curriculum in the Geography department. The new professors, Bill Hazelton (Director of Land Surveying at SCSU) and Eric Fuller, will be in place for the fall semester and the land surveying community should be very excited to see the continuation of the land survey program at SCSU. We should all welcome these professors into our community and thank them for their desire to continue educating those choosing our profession.

Much discussion was held at the BOD meeting and following Friday workshop regarding the prevailing wage (PW) proposed rule change and the position and testimony provided by MSPS. Nancy Haas, PW Chairman Dan McAninch, and committee member John Chaffee provided testimony at the July 25 public hearing and have been intimately involved in representing the society’s interest on this matter. Because of the short timelines for input and discussion, blast email notices have been sent to inform members of the happenings and to help provide opportunities for input. These individuals and the committee have spent many hours on behalf of our society in addressing this matter. They should be thanked for their efforts at being “watchdogs” for our members.

The 505 Manual committees of MACS and MSPS are currently circulating among their committee members for review and comment the draft 505

Continued on page 5
plat manual being prepared by Mike Fiebiger and Warren Smith. It is a goal to have this process completed prior to the MSPS annual meeting for circulation to members, the Minnesota land surveying community and others involved in the platting process.

The MLS Foundation met at the summer meeting to discuss past and future fundraising efforts of the foundation as well as the scholarship process. The meeting was well attended, with more than a dozen members present to provide input and direction. Foundation directors Harold Peterson and Dan Skinner are currently planning unique ways for fundraising to continue to significantly grow the fund in upcoming years. Look for some exciting opportunities to get involved, participate and contribute to this worthy cause.

Past President John Hosfield is beginning the arduous mission of finding a slate of new officers for MSPS, a foundation director, and people who are worthy of our prestigious annual awards. This is a chance to get involved by calling John with suggestions or offering to serve. John works with the current BOD and chapter presidents to form a search and selection process that will gather future leaders and award recipients. I encourage you to be generous and provide input.

Of course, this leads into the great community service our members provide directly to their association. As you can see by the contents of this article, many members are already contributing to the land surveying community and MSPS, and there are many others who are involved but are not mentioned here. The first service award that our society recognizes each year goes to the “Surveyor of the Year,” an award presented to an active member for recent and significant contributions of time and talent to benefit the society. With all that is going on, there will not be a shortage of worthy candidates and the difficulty will be in recognizing all who are worthy. The second service award, the “WM Kelly Memorial Award,” is given to a member who has contributed greatly to the community. Again, many of our members are actively involved in donating their time and talents to many worthy causes outside of normal business and routine. A quick glance at the MSPS roster will give you insight into the many generous volunteers and past recipients of these awards.

There are so many community happenings our members and their families contribute to or are involved in, including (but not limited to): cemetery commissions, planning commissions, school boards, youth sports, church groups, military organizations, American Red Cross, American Cancer Society, Susan G. Komen for the Cure, Relay for Life, Jaycees, Lions, MSPS and other non-profit organizations. While the land surveying community has many great volunteers working on its behalf, many are also tremendous assets to other community organizations to which they volunteer their time. From my own personal experience, I believe the land surveying community can be found deeply embedded in many of these other organizations and functions as we are oftentimes sought out for our wisdom, leadership and work ethic. You should be proud of your contributions and humanitarian efforts outside of your regular business and work days, as it is by far one of the greatest gifts you can give. The benefits you personally receive for your efforts are immeasurable. Congratulate yourselves for all that you do, and if you are not yet involved, find a worthy cause to participate in and find out how rewarding it is being a volunteer!

On a personal note, the tough economic times, downturn in the housing industry, rising energy costs, and falling stock markets certainly have our nation, state and industry up on its heels. I know, from traveling the state and region and being a private consultant, that these times have really taken a toll on many of us and our livelihoods. It is never pleasant to discuss the pain and agony of downsizing a firm or department. Many of the younger people in our profession have not seen times like this, which seem deeper than the early 1980s that many of us remember and relate to. As a business owner like many of you, I know how challenging it is to have discussions with employees about layoffs or reduced hours and benefits. We have mentored and worked closely with so many of these good people, and although the changes significantly impact them, it is often harder for those of us faced with making the decisions and bearing the responsibility of breaking the news to those who have been loyal to us and have become our friends. I trust that when times turn around, we will once again have the opportunity to call people back and surround each other in good times and good fortune.

**Minnesota Surveyor Upcoming Deadlines**

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From the NSPS Governor

By John E. Freemyer

A Proposal to Merge State and National Memberships for Surveyors

In 2004, MSPS members elected me to be their NSPS representative. My original interest in performing these duties was to find out more about the inter-workings of NSPS and to suggest ways the national organization could be more viable to land surveyors. I had heard that only about 10% of licensed land surveyors across the country were members of NSPS. That was such a dismal statistic I could only conclude something must be wrong.

The relatively low membership numbers of NSPS likely stem from a feeling that there are not enough benefits, membership cost is too high, apathy or a combination of all three. Most land surveyors can easily see the benefit of their state organizations in providing organized opportunities for dialogue, education and lobbying — to name a few. There are also numerous benefits of a national organization, although they are sometimes not as readily apparent. There is little doubt that NSPS could do a better job at promoting itself.

NSPS membership dues are $235, which is higher than most state surveyors association dues. Because some of the most important issues that impact surveyors are dealt with on a state level, one would expect national organization dues to be the lower of the two. Here’s one of the problem with that comparison. Using Minnesota as an example, approximately 85% of licensed land surveyors belong to MSPS. That strong membership commitment to our professional association is a major factor in controlling dues. NSPS has only about a 10% membership commitment of all licensed surveyors in the country, so the cost of doing business has to be assessed to a small proportion of the profession. As a side note, approximately 25% of Minnesota licensed land surveyors belong to NSPS.

At one of the first NSPS committee meetings that I attended in 2004, I suggested that NSPS should attempt to lower its dues by significantly increasing membership through cooperatives with state organizations. I was soundly criticized by the society president for even suggesting such a proposal. But consider this: if every licensed land surveyor in the country were a member of NSPS, a dues amount of $20 would equal the total amount received from all NSPS membership categories last year.

What if each state surveyors association would help finance NSPS by collecting an additional $20 from each licensed member? The national association could then advocate that they represent every land surveyor that belongs to a state association, which is a large percentage of all licensees. There representation would jump from a meager 10% to possibly as high as 80 to 90%. The importance of that is credibility. The credibility of an association goes up in direct proportion to the percentage of possible members who are represented. Think how it could impact Federal lobbying to improve our profession.

This is not an entirely new proposal. Several years ago, NSPS offered to reduce its dues amount by 50% if any state surveyors association made NSPS membership mandatory and collected the dues amount. The proposal was initially accepted by a few state associations, which effectively had to increase their dues by more than $100 to cover the NSPS portion. As expected, the significant increase in dues was not well received by some members. Most states did not even seriously consider the option.

Membership in a state surveyors association that automatically includes membership in NSPS is based on sound principles. A significant flaw with the earlier program was the $100+ dues increase that went along with it. What if the additional fee was $20 to $25? Would surveyors support an increase of that amount to maintain a strong national association?

At the NSPS Membership Development Committee meeting in September, I intend to present a proposal that would merge state and national membership at an estimated cost of $20 to $25. Implementing such a proposal would, of course, have to be adopted by each state surveyors association to be effective, but I am convinced it is the only way for us to have a strong national association. Your comments and suggestions would be appreciated.
Volunteerism in Minnesota and How to Continually Build MSPS Capacity

According to a report from the Corporation for National and Community Service (July 2008), Minnesota ranked third nationally for volunteerism during the past three years. We currently have a state volunteerism rate of 39.7% versus 27.2% nationally. The Corporation estimates that Minnesota’s 1.6 million volunteers gave 175.7 million hours of service per year during the past three years. The estimated economic contribution of all of this time is $3.4 billion annually. Minneapolis-St. Paul led the nation among larger cities with a 39.3% rate of volunteerism.

One of the study’s interesting findings is that volunteers don’t necessarily have more discretionary time on their hands to use for volunteer service — it is more in how they elect to use the discretionary time they have. Dr. Robert Grimm, the Corporation’s Director of Research and Policy said, “The research shows that volunteering isn’t as much about having the time to volunteer but creating volunteering opportunities that people want to make the time for.”

I happened to read this report about the time I was beginning to prepare for the MSPS Board’s planning session this fall. As you all know, we have a lot of fantastic volunteers working for the Society. These volunteers contribute to the statistics above and are to be thanked for the success of the Society. Most of our volunteers work via our standing committees and chapter structures. We also have hundreds of other members who might be unable or reluctant to make a standing commitment to a committee.

In collecting input for our planning session via our chapters and from Board members, I recognized one common thread as the (laudable) goal of finding ways to “get more members involved.” Getting more of our members to actively participate at the state and chapter level would certainly be a good thing and would further strengthen the Society.

Interestingly, there is much association management literature saying that one of the best ways to retain association members is to give them a job. So whether someone can make a standing commitment to a committee or not, simply giving them the opportunity to do anything will deepen their experience with the organization and they will be more likely to stay engaged. Further, a growing trend in association volunteerism is the concept of ad hoc volunteer opportunities. Churches and other groups have had a good handle on this for decades; for example, asking members if they could simply be a greeter on a given day or show up to help do some yard work for two hours. Do the task, and you are done. This way, volunteers can get more involved by putting in some time as their schedule permits.

I would like to suggest this as a kind of open dialogue with our membership including all of our chapter and committee leaders. Are there tasks that you could share with a fellow member without necessarily requiring them to serve on a committee? Some ideas might include serving as a session room monitor or a greeter, making 10 member recruitment calls, writing an article, presenting a session, speaking to a local school or organization, organizing a social event or writing a press release.

The bottom line is that getting our members engaged is a good thing. Research says that we are a leading state as far as volunteerism and that people’s choice to volunteer is not primarily a function of total hours available to them. It is about us considering and creating opportunities to engage volunteers that fit their particular interests and availability. For the folks with work and/or personal schedules that might preclude them from long-term service on a standing committee, we should continually develop ad hoc volunteer opportunities for them to create a more valuable membership experience for them and for the benefit of the Society.

Do you have some thoughts on how MSPS might increase involvement through ad hoc volunteer opportunities? E-mail me at erice@ewald.com.
In Fall 2000, St. Cloud State University brought Kenneth W. Wong to campus as an Assistant Professor in the Department of Geography to instruct students in the Land Surveying/Mapping Science degree program. Eight years later, the program has reached another watershed moment, as Ken will retire at the end of the Fall Semester of this year. The following letter was written in early 2002 and depicts the state of the program at that time.

February 2002

The Education Committee of the Minnesota Society of Professional Surveyors has spent many hours over the past decade discussing the educational issues of land surveying. We have been waiting for the time when the statement could be made that a bona fide land surveying degree program actually existed at SCSU. We now feel that the time is at hand. The program has grown from infancy under the nurturing and persistence of Dr. Robert Bixby and the support of a large family of land surveyors to the point where the adolescent stage is giving way to a mature and solid presence under Ken Wong. We strongly support his efforts and hope he is given the opportunity to continue this growth and success.

Ken has been excellent at visiting the Technical Colleges that have signed articulation agreements with SCSU, speaking with the instructors and students in the feeder system and learning the strengths and weaknesses of the current system. He has been able to increase the numbers of students committed to the program and continues to attract and keep these students focused on the Land Surveying and Mapping Sciences Degree.

One of the issues raised in the past concerned the need to bring the expertise of the local land surveyors to the classroom. Ken understands the value of exposing his students to real-life surveying issues to enable the students to confront the land surveyors as individuals, as businessmen and as prominent members of their local communities. He is working with the local surveyors in MSPS Chapter 5 to bring guest speakers and topics to the curriculum.

The hiring of Ken Wong was a long-awaited moment in the history of land surveying in Minnesota. As chairperson of the MSPS Education Committee, I feel his addition to the SCSU surveying and geography program will eventually let this program be known throughout the upper Midwest as not only strong in GIS but also in the fundamentals of land surveying. The scholarships provided through the Minnesota Land Surveyors Foundation will continue to support students in the program.

I thank St. Cloud State University for this opportunity to comment on its curriculum and hope to work together to help Ken and the faculty at SCSU continue to offer hope for the future of land surveying.

August 2008

Looking back:

We were hopeful Ken and the program would grow and mature. They have.

We wanted strong numbers of traditional students as well as allowing non-traditional students to supplement their education with night courses and ITV/Internet offerings. Ken worked summers and we got them.

We wanted respect for the program from other national programs. Ken attended the National Conventions, promoted the program, and we earned and got their respect.

We wanted ABET accreditation. Ken Wong put that responsibility on his back and completed a self-study of the program. We got ABET accreditation.

We wanted students of the program to be able to pass the FS (LSIT) test. They have, almost to the person.

Ken, we thank you; the students thank you; and the surveyors from Minnesota and the upper Midwest thank you because you have dedicated your life to this endeavor. As a teacher, you are a shining example of what can be done. You leave mighty big shoes to follow. Newly-hired Director of Surveying Bill Hazelton and Professor Eric Fuller will be very thankful for your efforts. We hope after this fall semester you will be happy doing whatever suits your fancy.

With sincere respect and thanks,

Dennis D. Pederson, LS
MSPS Education Committee Chair

Retrospective:
Ken Wong’s Career at St. Cloud State University
Dennis D. Pederson, LS
Introducing Bill Hazelton:
Q&A with SCSU’s New Director of Surveying

Q  When/where were you born?
    23rd August, 1957, and, as my
    mother annually reminds me, at about
    1:00 a.m. Royal North Shore Hospital,
    St. Leonards, a suburb of Sydney, Aus-
    tralia.

    I have lived in the U.S. since Christ-
    mas, 1995.

Q  When/where did you first be-
    come interested in surveying?
    As far as I know, I’m the only sur-
    veyor in my family tree, although my
    uncle was in the Royal Australian Sur-
    vey Corps in WWII. Most of my an-
    cestors were farmers, doctors or lawyers.
    But I was useful at math and science
    at school, didn’t mind being outdoors,
    so it seemed a good fit. I think the
    idea gelled in the last few years at high
    school, so I looked into what was in-
    volved, and headed to the Surveying
    program at Melbourne.

    After WWII, there had been a ma-
    jor expansion in surveying and mapping
    in Australia, along with development
    work, so there were lots of interesting
    things happening. I was fortunate in
    that I managed to be around in the early
    days of many of the current things, and
    sometimes even closely involved, e.g.,
    total stations, LiDAR, GPS, GIS/LIS,
    Inertial Systems. I’ve also dabbled in
    a few other things along the way, like
    farming and glaciology.

Q  What is your academic educa-
    tion background?
    After high school (at a small rural
    school, Year 12 was eight girls and me!),
    I went to the University of Melbourne,
    where I entered the Bachelor of Survey-
    ing program (a four-year degree). I com-
    pleted that in 1979. I was licensed in
    the state of Victoria in 1985. In 1988 I
    returned to Melbourne to do my Ph.D.,
    completing that in 1992.

    Navigating across the inland areas
    of Antarctica before GPS was an inter-
    esting experience. Doing control sur-
    veys with GPS in 1987, when the obser-
    vation window was about four hours,
    was a different experience, with rushing
    to a point and setting up, followed by
    sitting around waiting for the data to be
    collected. Using an inertial survey sys-
    tem to provide the primary ground con-
    trol, from which photo-control points
    for a large 1:25,000 mapping job was
    controlled, produced some interesting
    times, including a single leveling shot of
    about 5 km.

Q  Do you have any fun stories or
    facts you would like to share?
    The following exchange would only
    happen in a group of surveyors. I was
    with a group of surveyors in the Special
    Projects Section office at our organiza-
    tion. One guy was discussing the diffi-
    culties he was having in getting a Japa-
    nese-made camera mount to fit onto a
    European Hasselblad camera, despite
    having supposedly similar threads.

    Tom: Why do Japanese and Eu-
    ropean metric threads never seem to
    match?

    John: Well, you see, the length of
    the meridian through Tokyo is slightly
    different to the length of the meridian
    through Paris.

    One story that still amuses me:
    When I was a small child, if I had
    thought about it at all, I would have
    said that the Earth is flat. After all, it
    looks flat, even if you climb a tall tree
    for a better view.

    When I went to school, they told
    me that the Earth was round. Round
    like a ball, or round like a dinner plate,
    or round like a cereal bowl, or round
    like a donut, was usually not specified.

Continued on page 10
When I went to high school, I was told that the shape of the Earth was a sphere. More or less.

When I went to university, I was told that the shape of the Earth was an oblate spheroid or ellipsoid. Some even hinted that it was a tri-axial spheroid.

When I got to the more advanced surveying and geodesy classes, I was told that the shape of the Earth was a geoid.

I went to the dictionary, looked up “geoid,” and found that it meant “Earth-shaped.”

The Discworld series of novels (a satire on fantasy literature as well as contemporary culture) by Terry Pratchett all take place on a flat disk world, which travels through space supported by four elephants standing on the back of a giant space turtle. The Discworld has its own tiny sun and moon orbiting it, and has eight seasons. Quite apart from the story lines, the physical nature of the Discworld provides an interesting diversion for those familiar with geodesy, and for those who might wish for a plane Earth to make surveying easier!

These all have a geodesy flavor, I realize, but there are amusing things elsewhere in surveying, too.

Q When did you first become interested in teaching land surveying?

I became involved gradually, around when I started my Ph.D. I was involved with the surveying students and helped out with classes, lectures, labs and tutorials. I taught a course on information systems for surveyors during my post-doc year. Then I became a full-time teacher, running a GIS, Remote Sensing and Earth Sciences track in Australia, before moving to the Surveying program at the Ohio State University. It was only at OSU that I really started to teach core surveying courses, and I found that my work experience was extremely useful in making it meaningful.

Q What are your hobbies?

With three teenage boys, I have had a bit of involvement with Boy Scouts, and more recently Sea Scouts (yes, even in Ohio). I enjoy sailing and skiing and a range of other activities, when I get a chance.

I have been known to write surveying programs for HP calculators, particularly the HP-33S and HP-35s. I am also writing a surveying textbook, with a couple of colleagues, and I suspect my St. Cloud students may be test-driving parts of it.

Q Do you have family facts you would like to share (wife, children, etc.)?

My wife, Anne, is from Northern Ireland. We met on a camping trip to the Little Desert in Australia, and were married in 1984. We have three sons, Nick (15), Jonathon and Adrian (14-year-old twins), all of whom were born in Australia.

My parents live in a small country town in Australia, near where my paternal grandfather was born. My father will turn 95 later this year, while my mother claims to be “29 and some months,” but refuses to quantify “some.” This may suggest that the inclination to measure things exactly is not an inherited trait.

Q & A with Bill Hazelton, continued from page 15

MSPS Winter Workshop
Friday, December 5, 2008 • Doubletree Hotel, Minneapolis • 8 a.m. to 4 p.m.
“Survey Evidence and Procedure”
Speaker: Jeffery N. Lucas

Jeffery N. Lucas is in private practice in Birmingham, Alabama. Mr. Lucas has been in the surveying business for 31 years. He is a licensed land surveyor registered in Alabama, Florida, Georgia, Mississippi and Tennessee. Mr. Lucas is also a licensed attorney and member of the Alabama State Bar. Mr. Lucas specializes in land boundary issues and practices throughout the southeast. He has been a seminar leader on surveying topics that include ALTA/ACSM standards, survey technical standards, boundary law, survey law, legal descriptions, state plane coordinates, geodetic surveying, and water boundaries. In addition, he has authored many articles on surveying and boundary issues that have been published in state and national professional journals.

See the insert with this magazine — or register online at www.mnsurveyor.com now!
Preserving the History of Land Surveyors and Their Records
By Ron Murphy

As noted in the Summer 2008 issue of the Minnesota Surveyor, much of the work of land surveying requires following in the footsteps of previous land surveyors.

Thanks again to those who have begun this work: Ron Olson, Greg Fordham, John Freemeyer, Lisa Hanni, Dennis Robinson, Mike Murphy, David Claypool, and Sunde Land Surveying.

Following are a few more excerpts of material compiled thus far.

We have a continued need for land surveyors or interested individuals to actively go out and collect historical information. It could be done as an activity in your chapter or by a group of interested parties, or by individuals. Or perhaps you are retired and need something to keep your interest up. In any case, this is an excellent outlet. If you are interested in history, we have a need for researchers and interviewers.

Call me at (952) 886-3112 or email me at Ron@Sunde.com. We can accomplish something important.

Ron Murphy, PLS 10832

S. S. Sargeant: 58 Years a Surveyor in Todd County

The following information was provided to MSPS by Mr. Sargeant's daughter, Grace Sargeant.

In 1866, when Todd County was mostly inhabited by Indians, and those sparsely, the family of Samuel Sherman Sargeant came into the county driving two wagons, one pulled by oxen and the other by horses. Mr. Sargeant, then a boy of 14, drove the stock behind the wagons with his brother Walter. Young Samuel had already been a witness to plains history two years previously when his family was driven from their home in Garden City by the Sioux uprising of that time, and he had viewed the subsequent hanging of 38 Sioux in Mankato.

While growing up in Todd County, Mr. Sargeant learned enough Chippewa to get by on and also taught school for a short while after graduating. During that time, a two-year grasshopper plague hit Todd County and Minnesota, with grasshoppers so thick in the swarm that the darkened the sun.

In 1882, Mr. Sargeant was elected County Surveyor, having previously been a deputy surveyor for Charley Ward. He held that office until 1942 with the exception of one two-year term. In the 58 years that he was a practicing surveyor in Todd County, he felt that he had walked almost every 40 in the County, and the bulk of the surveying done in the area had been done by him. The big advance in surveying in Mr. Sargeant's time was the development of the road, so that a horse and buggy could be used to get to a destination rather than walking there with your equipment on your back or on a horse across country.

Norman Schmidt, County Surveyor after Mr. Sargeant and now of Duluth, recalled that Mr. Sargeant was a prodigious walker. When Norman was 24 and Mr. Sargeant 90, the old surveyor could still outwalk him. Norman also recalled that Mr. Sargeant carried the location of a great many monuments and corners in his head, and could go to an area surveyed many years past and point out the corners. Norm also recalled that Mr. Sargeant's work was conscientiously done for the requirements of the time. When Norm took over as County Surveyor, he started an inflationary spiral we are still feeling today when he charged $5 for a lot survey and Mr. Sargeant had been charging $1.

Dick Howe, who followed Mr. Schmidt as Todd County Surveyor, states that the bulk of the records available to work with are Mr. Sargeant's and that they were also good for the requirements of those days.

The records kept by Mr. Sargeant at the County Recorder's office are in narrative form, stating where he started

Continued on page 12
on the survey, what he found or set for the monuments, and the distance and compass variation. The surveys were numbered and a concise map showing the distances and type of corner were included.

Mr. Sargeant died at age 97 in Long Prairie in 1949. His obituary in the *Long Prairie Leader* stated:

“As a pioneer, a surveyor, father and friend, Mr. Sargeant raised a memorial to himself that will long endure. His intimate knowledge of the county, his long residence here during the time the county made such rapid progress, a progress incidentally in which he played a prominent part, made for him a special niche few residents have had the privilege of filling. In his death the county loses a fine citizen and gentleman, one of whom it can truly be said that county and community has been the better for his having been a resident here.”
Chapter 2 has decided to proceed with a Geocaching Project. The idea for this project was first proposed by Russell Kastelle as a fun activity for Chapter members to volunteer for, that will promote our Chapter, the State Society, and the Survey Profession, using the popular hobby of Geocaching.

Geocaching is a relatively new activity where participants use handheld GPS units to find caches that have been hidden outdoors somewhere. There are now almost 600,000 of these geocaches hidden worldwide, according to the www.geocaching.com website. The website is the hub of this hobby. It has more than 50,000 members, and is the central point where coordinates for the caches are published, and where participants log their “finds.” This website also has all kinds of information about this hobby, including how to construct geocaches, what to put in them and where to locate them, as well as information about buying and using GPS units, and then using the GPS to find Geocaches. Geocaching is also now a popular activity for Boy Scout troops.

The goal of Chapter 2 with this project is to install at least one cache in each of the 19 counties within our Chapter’s boundaries. Each cache would be installed and maintained by a Chapter member volunteer. Once the cache is installed, the volunteer would provide me with the Latitude and Longitude coordinates for the cache, and I would then publish the cache on the www.geocaching.com website. Each cache should be marked in some way to show that it is connected to MSPS, and should somewhere have a link to the MSPS website listed. We could also publish the locations of these caches on our Chapter 2 webpage on the MSPS website, and can also use our involvement with this project as an example of what kinds of activities our Chapter is involved with. The MSPS website already has page with details on a Geocache set by MSPS members in Hennepin County.

The Great Plains Chapter of the North Dakota Society of Professional Land Surveyors, that both Russell and I are members of, undertook a similar geocache project two years ago. We installed a cache in each of the nine counties in our Chapter area. It is really fun to see the large number of visits to these sites, and to read the log entries on the www.geocaching.com website for each of the caches. Most sites have a steady flow of visitors to them and many of the sites have visits to them even during the winter.

Construction of the Geocache:

It is important for containers used for the Geocache to be waterproof, and it should be set in some way that the wind won’t blow it away. Here are a few ideas for what to use for the geocache container. For our Great Plains Chapter caches, Russell took an empty red plastic Folgers coffee can and bolted it to a small iron t-post. The t-post was set in the ground, holding the coffee can up off the ground. On the one I installed, I added a string to attach the lid to the post, so that if the lid wasn’t tightly placed back on the can, it wouldn’t blow away and get lost. We didn’t have any vinyl NDSPLS stickers available, but used clear packing tape to attach our society name and logo to the outside of the container. This worked well, making the logo waterproof. Other ideas for the cache container include a metal ammo box or a Rubbermaid container. Eric Ewald has offered to supply MSPS bumper stickers that could possibly work for labeling the outside of the cache.

Placement of the Geocache:

Coming up with a good location to place your cache is probably the biggest challenge with this project. It’s best to make it somewhat of a challenge for people to get to. That’s part of the fun for the person hunting for the cache. Also, if it is off the beaten path and placed so that it is hidden away from view from those who are just passing by, it is less likely to be vandalized or stolen. If the cache is placed on private land, please obtain permission beforehand. If the cache is placed on public land, make sure the controlling agency doesn’t prohibit this. National Parks and U.S. Fish and Wildlife Refuges are off limits for geocaching. If you think the controlling agency would be opposed or have a concern, obtain their permission first. The cache should be in a location that doesn’t require the hunter to trespass to reach it. The www.geocaching.com website has a list of criteria that a cache site has to meet to enable it to be published on their site. Go to http://www.geocaching.com/about/guidelines.aspx to see the guidelines that must be met for publication of the cache on the website. The web page http://www.geocaching.com/about/hiding.aspx has good tips for locating the cache. Ideas for location include country cemeteries, local or county parks, public forest or grasslands, or abandoned farmsteads. Use your knowledge of your local area to come up with a good location.

Contents of the Geocache:

The cache should contain a small number of prizes or trinkets. It is part of the hobby that the person who locates

Continued on page 14
Chapter 2 Geocache Project, continued from page 13

the cache takes one of the items in the cache and leaves behind another item for the next visitor. So some ideas for items to include are pencils, pens, key chains, coasters, or any small item you normally give away to promote your business with your name on it. It can be small toys, puzzles, gift certificates, bumper stickers, coins, or souvenirs. The cache should also contain a logbook and a pencil for people to sign and leave messages in. It’s also a good idea to leave a note explaining the cache so that someone who doesn’t know about geocaching and stumbles across the cache will be able to know what it is. Place the contents of the cache in a resealable plastic bag to keep them dry if the lid gets left off. The web page [http://www.geocaching.com/about/hiding.aspx](http://www.geocaching.com/about/hiding.aspx) has some good tips about cache contents also.

**Maintenance of the Geocache:**

The volunteer should occasionally check on the cache to make sure it is still in place and not damaged. From what I’ve seen, in some ways the cache is almost self-maintaining. Looking at the online log entries for the cache that I installed for the Great Plains Chapter project, I’ve been able to track the condition of the cache on a regular basis. I’ve been amazed at the care that the cache hunters have shown to fix problems they find when they arrive at the cache.

**How to Volunteer:**

Here is a list of the counties in our Chapter boundaries:

- Becker
- Beltrami
- Cass
- Clay
- Clearwater
- Crow Wing
- Hubbard
- Kittson
- Lake of the Woods
- Mahnomen
- Marshall
- Norman
- Otter Tail
- Pennington
- Polk
- Red Lake
- Roseau
- Wadena
- Wilkin

If you’d like to volunteer to place and maintain a cache in one or more of the above counties, let me know. I’ll let people know who is taking what locations. Once you’ve placed the cache, let me know the Latitude and Longitude of its position, and I will publish the coordinates to the [www.geocaching.com](http://www.geocaching.com) website. I will also need to know a description of the cache container and some detail on the location, terrain, difficulty level to reach, etc. Remember to look at the guidelines for publishing geocaches at [http://www.geocaching.com/about/guidelines.aspx](http://www.geocaching.com/about/guidelines.aspx) before placing your geocache to ensure that it meets the requirements to enable us to get the cache published on the website.

If you’d prefer to become a member of the [www.geocaching.com](http://www.geocaching.com) website and enter your cache yourself, that would be fine too. Just let me know the cache name and coordinates.

I’ll also work with Eric to get information about this project and the geocache site on the MSPS website.

Let me know if you have any questions about this project, if you’d like to volunteer to place a cache or caches, or if you have any suggestions that I can pass along to the others.

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Fargo, ND 58105
Phone: (701) 237-5065
Fax: (701) 237-5101
e-mail: cskarphol@houstonengineeringinc.com
Website: [www.houstonengineeringinc.com](http://www.houstonengineeringinc.com)

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Exhibit Sales Open Now for 2009 MSPS Annual Convention

The Minnesota Society of Professional Surveyors 2009 Annual Meeting will be held at the St. Cloud Civic Center, Thursday, January 29 and Friday, January 30. This conference provides vendors with a great opportunity to display products and services and have direct contact with the 500 to 700 anticipated attendees.

Exhibit space will be professionally set up and draped by A&N Convention Services in the spacious Terry Haws Center of the St. Cloud Civic Center. This venue will allow for additional exhibit space and more room for attendees to roam and meet our exhibitors.

The early-bird rate for MSPS members is $575 per booth; the non-member early-bird rate is $650; and the Educator early-bird rate is $75 per booth. Rates increase as of November 17, 2008. The Exhibitor Prospectus is available in pdf format on the MSPS website, www.mnsurveyor.com. Place your order early to ensure your choice of booth space!

Exhibits will open at 8 a.m. on January 29 with coffee and rolls set up in the exhibit area. The MLS Foundation’s silent auction will be held in the exhibit hall throughout the exhibit times, and refreshments will be served in the exhibit area to assure that booths are well attended. The schedule will include open times for attendees to visit the exhibits.

MSPS has reserved a block of rooms for attendees and exhibitors in the nearby Kelly Inn, (320) 253-0606.
The Wisconsin Department of Transportation (WisDOT) Geodetic Survey Unit has developed a Wisconsin Continuously Operating Reference Stations (WISCORS) Network, consisting of permanent GPS sites, which provide real-time correctors to mobile users. Mobile users who are properly equipped to take advantage of these correctors can survey in the field to the 2-cm accuracy level in real-time. The program is being partnered with state and local governments, federal agencies and educational institutions. Today WisDOT is pleased to announce the availability of the WISCORS network in the eastern portion of Wisconsin. The network consists of 23 CORS located throughout eastern Wisconsin. Two more CORS sites located in Madison and Janesville will soon be operational.

To access WISCORS, go to https://wiscors.wi.gov/, then select Accessing WISCORS. At the top of the paragraph you then click WISCORS (https://wiscors.wi.gov/Login) to view more information or register as a user. To register as a user, select “New users may register...”, and proceed to fill out the form. After your information is submitted, the network administrators will receive notification, review your application, and then approve or deny your request. Upon approval, the administrators will assign you a user name and passcode to utilize the system. You need to register the name of a user for each rover unit. For example, if you have two GPS rover units, you need to register the names of two individuals, one for each unit. If you have one GPS rover and several survey personnel who might use the rover, then you only need to register one individual (the user name and passcode can be used by other team members for that one GPS rover). Currently, there is no charge to use the system, however a fee of approximately $500 per registered user per year will most likely be implemented on 1 January 2009. Discount rates will probably be used for entities that have several registered users with several GPS rovers.

We thank the Partners who contributed facilities, power, internet connection, and in some cases a receiver toward the development and construction of WISCORS. Appreciation and thanks is also extended to personnel from Trimble Navigation, Seiler Instruments, WisDOT DBM BITS, and WisDOT DTSD who assisted in building this infrastructure. Lastly, two individuals should be recognized for their substantial work on the project: Elliot Smith from WisDOT Geodetic Surveys Unit and Chad Ingle from WisDOT DBM BITS.

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Coalition of Geospatial Organizations Announces Formation

The Coalition of Geospatial Organizations http://www.urisa.org/cogo (COGO) came into official being on August 4, 2008. Representatives of the 11 founding member organizations met at the ESRI Users’ Conference in San Diego and voted unanimously to approve a set of rules of operation and procedure that brought COGO into existence. Several attended via conference call and WebEx.

COGO grew out of a series of stakeholder meetings among the leaders of national organizations involved in geospatial data and policy issues over the last several years. The groups realized that they had common interests and concerns and that they could increase their effectiveness by speaking with one voice wherever possible.

After voting to formalize COGO by adopting rules of operation, the group selected an inaugural slate of officers. The Chair is Cy Smith from the National States Geographic Information Council, the Chair-elect is Curt Sumner from the American Congress on Surveying and Mapping, and the Secretary is George Donatello from the International Association of Assessing Officers.

“I know I speak for all organizations that have joined this coalition when I say that we are excited and optimistic about the potential to accelerate the advancement of a variety of national geospatial issues,” said Oregon GIS Coordinator and NSGIC President Cy Smith. “We intend to begin immediately developing a collaborative advocacy agenda and aggressively pursuing those issues on which we can all agree. We invite other geospatial organizations and organizations with an interest in geospatial issues to join us as member or advisory organizations.”

The founding Member Organizations are:
- American Congress on Surveying and Mapping (ACSM)
- American Society of Photogrammetry and Remote Sensing (ASPRS)
- Association of American Geographers (AAG)
- Cartography and Geographic Information Society (CAGIS)
- Geospatial Information Technology Association (GITA)
- GIS Certification Institute (GISCI)
- International Association of Assessing Officers (IAAO)
- Management Association for Private Photogrammetric Surveyors (MAPPS)
- National States Geographic Information Council (NSGIC)
- University Consortium for Geographic Information Science (UCGIS)
- Urban and Regional Information Systems Association (URISA)

The founding Advisory Organizations are:
- National Association of Counties (NACo)
- National Emergency Number Association (NENA)
- Western Governors Association (WGA)
- American Planning Association (APA)

The next meeting of COGO is expected to be held in Washington, DC, in October in conjunction with the next meetings of the Federal Geographic Data Committee and the National Geospatial Advisory Committee.

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Shoreland Rules Update Project:
Creating Standards for Lake and River Conservation

*Information provided by Minnesota Department of Natural Resources, July 2008*

**Open Houses**

During June, the Shoreland Rule-making Team (Felicia Barnes, Paul Radomski, Peder Otterson) along with Darrin Hoverson, Robb Collett and Mike Mueller criss-crossed the state with twelve open houses to gain public comment on development standards for lake and river protection. From Win- dom and Winona to International Falls, we talked to more than 500 citizens. These evening events were also attend- ed by other DNR staff (Waters, Fish & Wildlife, Ecological Services, Trails & Waterways, Enforcement, Lands & Minerals, etc.). In addition, there were information stations on related work staffed by other agencies and organiza- tions (PCA, SWCDs, WDs, lake asso- ciations, local governments, Minnesota Extension and nonprofit groups).

It was a good opportunity for inter- ested people to learn about the shore- land rule update project and to express their concerns and opinions on this im- portant rulemaking effort. During the open houses, we also solicited nomi- nations for the three geographicallyfo- cused advisory committees to be formed in August to assist with the rulemaking project by providing us with area-spe- cific advice.

**Advisory Committee Progress**

Two advisory committees have been convened to provide advise to the DNR. The Statewide External Advisory Committee met in March and May to identify the critical issues related to shoreland development. In addition, this committee heard presentations from Brian Ross, CR Planning, and Phil Carson, Bonestroo. Brian presented information on the importance of ‘green’ infrastructure around lakes and rivers for maintaining economic value and quality of life, and Phil presented information on the history of zoning, regula- tory takings, and the important role of zoning ordinances. Their presentations are posted on the project’s website.

**Local Government Zoning Staff Survey**

The DNR conducted a web-based survey directed at city, county, and township zoning officials to get their perceptions of existing shoreland develop- ment standards and their experiences of administering a shoreland ordinance. Over 120 local government officials completed the survey, with a good dis- tribution of respondents from across the state. The results of the survey were:

- Most officials agreed that the State’s shoreland conservation standards should be revised;
- Most thought that the State’s stan- dards should be more protective of lakes and rivers, yet allow greater flexibility in ordinance implemen- tation;
- They generally rated the DNR ad- ministration and oversight as good;
- They suggested that the now sepa- rate Wild & Scenic River standards could be integrated within the river protection standards of the shore- land rules;
- Most officials rated the decision- making and handling of shoreland variances for the hardship criteria as good.

**Next Steps**

In the coming months, we will use the comments received from the open houses along with all the other input that we have gathered to date to write a report on the important issues identi- fied. This will close Phase I and serve as a basis for Phase II of the project dur- ing which the advisory committees will begin suggesting potential policies to address the critical issues identified. We will organize and convene geographi- cally-focused advisory committees and will facilitate discussions with these committees along with the Statewide External Advisory Committee on vari- ous standards for lake and river conser- vation. In Phase III of the project, these options will be refined into a prelimi- nary draft set of rules before proceed- ing further into the formal rulemaking process.

**Contact Information**

Peder Otterson, Shoreland Manage- ment Supervisor, (651) 259-5697
Paul Radomski, Science Advisor, (218) 833-8643
Felicia Barnes, Planner, (651) 259- 5716
Minnesota Trig-Star 2007-08: What was in the Water?

By Rob Roberts

Wow! Participation in the Trig-Star Program in Minnesota increased for 2007-08, and the scores took a boost as well. Granted, the Local and National exams are revised annually, and last year’s local exam seemed to take me forever to complete, but this time I was back in the 100% saddle, in a slappy 44 minutes, and ... well, read on. My crew here at the office says they'll tell me as soon as it is time for the home. (Two summer employees are MHS Trig-Stars, so they are entitled to smirk, maybe?)

Note: Remember, the format for this contest is 60 minutes max, high score wins, and time elapsed is used as the tie-breaker. In the first two lists below, an asterisk (*) indicates a score of 100%. Local prize money varies between Chapters, see listing below for Trig-Star Committee reps if more information is required. State prizes and medals are awarded for the top three finishers, and National prizes for top three finishers and their instructors.

$350/Gold First Place: Zhangxin Xue, Mankato West (22:44)*

$250/Silver Second Place: Kari Krieger, Moorhead (31:45)*

$200/Bronze Third Place: Nathan Owens, Waseca (34:34)*

In Chapter order, not in order of finish, the local winners at each of the participating schools from across Minnesota are listed below. Congratulations to all winners, as usual, and thank you to all participants — we hope to see you again next year, if you are still enrolled at the high-school level. And, we encourage any and all students from other schools to contact the undersigned, or another Committee member, for more information on participating next time around. Numbers in parentheses indicate order of finish on a Chapter-wide basis.

Chapter One/Southwest

(Committee contact: Janele Fowlds)

Blue Earth Area High School: Dalton Moor

Continued on page 21
Granada Huntley East Chain High School: Dan Stensland
Mankato West High School: Zhangxin Xue* (1)
New Richland - Hartland - Ellendale - Geneva High School: Shelby Whitcomb
New Ulm Cathedral High School: Sadie Olson
Nicollet Public High School: Lucas Bode* (4) (41:21)
St. Clair High School: Erik Hasse* (5) (41:40)
Sleepy Eye/St. Mary’s High School: Bryant Tauer
United South Central High School: Amanda Huper* (3) (38:55)
Waseca High School: Nathan Owens* (2)

Chapter Two/Northwest
(Committee contact: Terry Freeman)

Breckenridge Senior High School: Caitlin Gerdes
Moorhead High School: Kari Krieger*
Park Rapids Area High School: Jake Grimes* (38:26)
Walker - Hackensack - Akeley: Michelle Peck

Chapter Three/Hiawatha Land
(Committee contact: Peter Oetliker)

(Rochester) Lourdes High School: Tucker Ward* (37:00)

Chapter Four/Arrowhead
(Committee contact: Fletcher Koos)

(Duluth) Central High School: Shauna Wrazidlo
(Duluth) Denfeld High School: Paige Stein
(Duluth) The Marshall School: Kelsey Klug* (51:07)
Hermantown High School: Joseph Harmon
Two Harbors High School: Chase Williams

Chapter Five/Central Lakes
(Committee contact: Steve Jobe)

No participation

Chapter Six/Metro
(Committee contact: John Benner)

Eden Prairie High School: Isaac Urban斯基
(New Brighton) Irondale High School: Meghan Eskolin

Now, for more big news! Minnesota’s winner came in sixth at the National level this year! I think that is excellent, considering our state’s level of participation. See if you agree after reviewing the information below.

$2000/$1000 First Place: Anthony T. Pabillano, Flour Bluff High School, Corpus Christi, TX

$1000/$500 Second Place: Ian Vonseggern, Santa Rosa High School, Santa Rosa, CA

$500/$250 Third Place: Anthony Calcagni, Hudson High School, Hudson, MA

Other notables: Iowa (7th place), Puerto Rico (8th), Montana (18th), South Dakota (20th), Wisconsin (24th), North Dakota still a non-entrant. Total number of entrants: 34.

To date I have received information regarding order of finish only on the National exam, no score/time data.

It seems to me that those top three states may benefit significantly from larger participant pools than ours — more on that when/if I speak directly with National Trig-Star leaders prior to the contributions deadline for the next issue of this magazine. (The expansion of the program’s funding mechanism appears delayed, pending the results of our country’s fall elections; I suppose I shouldn’t be surprised in that regard.)

I’ll stop there, due to anticipated space constraints for this issue of our magazine. More to come in our next report, including the thank you to survey/sponsors across the State and, as previously stated, updates regarding the National and State Trig-Star contests. Until then, thank you to all students, teachers, sponsors, and supporters around Minnesota for the time and effort expended on another great year of the Trig-Star Program.

Rob Roberts, MN State Trig-Star Coordinator
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Moorhead, MN 56561-0533
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robjroberts@earthlink.net
Minnesota Land Surveyors Foundation Needs Your Help

By Harold Peterson, PLS

The Minnesota Land Surveyors Foundation was established on August 15, 1981, for the following purposes:

1. To promote education, study and research in the field of Land Surveying.
2. To improve and facilitate the advancement of the profession of Land Surveying.
3. To provide scholarships, awards or other support to qualified students in the field of Land Surveying.
4. To take by bequest, gift, grant or purchase, any property, real or personal for the general or special purposes of the Foundation.

In 2008, the Foundation awarded 20 scholarships with a total value of $28,600. The first two scholarships were awarded in 1984, at $100 each. With your help and support, the Foundation has come a long way in supporting our young surveyors. We need your continued support.

In 2009, the MSPS board of directors has reduced its support of the Foundation to provide additional support directly to the land surveying program at St. Cloud State University. Your Contributions are needed to allow the scholarships to continue at their present level. Again, your contributions do make a difference.

Please detach this portion and mail with your contribution to: Harold C. Peterson, PLS (Foundation Treasurer).

Harold C. Peterson, PLS (Treasurer)
2500 W. County Rd. 42
Burnsville, MN  55337

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ANNOUNCING

“N.Y. Taylor, 1872”
By Dan Metz, 2006

In 1873, Taylor accepted his first contract as a U.S. Deputy Surveyor. He was later elected as Meeker County Surveyor, a position he held for many years. In 1921, he helped enact the first licensure laws for land surveyors and became the first “Registered Land Surveyor”. Norris was also elected the first President of the Minnesota Surveyors and Engineers Society in 1896.

Prints of this original painting depicting N.Y. Taylor working on the original government survey in the Red River Valley area by Dan Metz (www.danmetzart.com) are now available for framing and display in your home or surveying office. Edward J. Otto, the 2006 President of the Minnesota Society of Professional Surveyors (MSPS), has commissioned the original work. A portion of the proceeds from the sale of the prints will be given to the MSPS Foundation for the “Otto” Family Scholarship Fund.

Printing will be limited to 500 prints. Each print will be a 16” x 22” full color image of the original. It will be numbered and signed by the artist, Dan Metz and will include a Certificate of Authenticity.

ORDER FORM

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TOTAL

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Mailing Address: ________________________________

City, State, Zip Code: ________________________________

Daytime Phone Number: ________________________________ Email: ________________________________

Please make checks payable to Edward J. Otto, 9 West Division Street, Buffalo, MN 55313.
Land surveyors get excited when they discover ancient artifacts, especially those that have been buried or unknown for a long time. The surveyor knows the time spent to reveal the circumstances was worthwhile when the analysis of an artifact shows it to be a crucial piece of evidence for determining important land boundaries. Likewise, when specific procedures are found to provide the "why" behind an original survey, the land surveyor knows they are on to something good. Such discoveries can offer the much-needed explanation for why the land surveyor's own measurements compare that way they do with those of the original surveyor. The professional lives by the mantra, "following in the footsteps..." Some help may be found toward this objective from a recently completed research project designed to uncover more information pertaining to the specifics of United States Public Land Survey System in Minnesota. The published project, An Inventory of the Public Land Survey Records for Minnesota, the Special Instructions, can be found at: http://www.research.dot.state.mn.us/detail.asp?productID=2152.

The project is designed to lead the way for subsequent work needed to plan, convert, and handle the distribution of these valuable records for land surveyors and others seeking to understand the vital details carried out by the General Land Office (GLO) in completing the surveys of the public lands. It is focused on one part of the record collection, the GLO Special Instructions which conceptually form the third leg of a stool along with the equally important GLO township plat maps and field notes. Their importance was expressed by President Abraham Lincoln in 1862 when he signed into law, "An Act to reduce the expenses and sale of the public lands in the United States." (12 Stat. 409) which in part stated:

"(T)he printed Manual of Instructions relating to the public surveys, prepared at the General Land Office, and bearing date February twenty-second, eighteen hundred and fifty-five, the instructions of the Commissioner of the General Land Office, and the special instructions of the surveyor general, when not in conflict with said printed Manual or the instructions of said Commissioner, shall be taken and deemed a part of every contract for surveying the public lands of the United States."

This project establishes some of the groundwork for a more detailed inventory of these important records: In addition, some of the highlights of the report include:

• Pointers to other document finding aids
• An outline of the sources of the Special Instructions and the role they play within the GLO information collection
• Appendices with examples of special instructions providing clues as to their variety and variation
• Information on where to find special instruction pertaining to surveys in Minnesota but housed in locations outside of the state.

The report can be downloaded for free from the above link or if a printed copy is desired, send an email to research@dot.state.mn.us with your contact information and a comment in the subject line containing: Request hardcopy print of Report No. 2008-05.

The research project was sponsored by the Minnesota Department of Transportation. The University of Minnesota's Center for Transportation Studies administered the research project, which was headed by University Professor Roderick Squires in the Department of Geography.
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Introduction

In the last article, I described some of the correspondence between John Wilson, the Commissioner of the General Land Office, and Warner Lewis, the Surveyor General of Wisconsin and Iowa, and between Lewis and Elisha Norris, the deputy awarded a contract to establish the first standard parallels and guide meridians in western Minnesota. Here I describe how Norris carried out the work specified in his contract, focusing on the correspondence between Wilson, Lewis, and Norris and also the correspondence between Lewis and William Neely, appointed by Lewis to examine the lines established by Norris, and the two deputies appointed to resurvey some of those lines, John Ball and John Ryan. I also add information taken from the relevant field notebooks. (Figure 1) 2

The Contract Awarded Norris

On June 2, 1853, the Surveyor General of Wisconsin and Iowa, Warner Lewis, awarded Elisha S. Norris a contract to run Guide Meridians 1, 2, and 3 and the standard parallels between them. In the special instructions, Lewis wrote,

The contract into which you have this day entered embraces in part the survey of certain lines designated by the Commissioner of the General Land Office as Guide Meridians No. 1, 2 & 3 — The Parallel of 43° 30’ North Latitude which forms the Boundary between the State of Iowa & Territory of Minnesota will form the base for all surveying operations in said Territory on the West side of the Mississippi river, and from the great care with which it was run & marked will compare favorably with any other base for surveys in the United States.

In view of the fact that it has been decided that the surveys North of said Base shall be conducted in accordance with the method prescribed for the public surveys in Oregon a copy of the instructions to the Surveyor General of that district giving full directions as to the manner in which the lines shall be run with all the particulars as to the monuments is herewith furnished you and the portions thereof which refer more particularly to your work & which you are implicitly to follow you will find enclosed in black lines. 3

The surveys in Minnesota will all count from the Arkansas Base that is the Townships will count in continuation of those in Iowa while the Ranges will number from the Fifth Principal Meridian.

You are to commence your survey of Guide Meridian No. 1 at the corner to Range 10 & 11 and from said corner run on a true Meridian due North (establishing at 40 and 80 chs respectively the proper miles and half mile corners as you progress) to the Mississippi river. By reference to the accompanying map however which has been carefully compiled in this office it will be seen that said Meridian will strike the Southern boundary of the Reservation set aside for the use of the Half Breeds of the Sioux Nation under Treaty of July 15th 1830 before it reaches the river. Should this prove to be correct you are to carry said Meridian no farther than the limits of said reservation; but at the point of intersection, plant a monument, take the proper bearings within your own work, and give the intersection with the nearest corner planted on the boundary of said Half Breed tract.

Guide Meridian No. 2 you will start at corner to Ranges 17 & 18, and surveyed in like manner to the Mississippi River which it will probably reach about Township 115.

Guide Meridian No. 3 will be started from corner to Ranges 24 & 25 and be surveyed due North to the Mississippi River. It is required by the Commissioner that these lines be double chained, one set of chainman following the other, and that monuments planted therein shall be made in the most enduring manner and in strict conformity to the accompanying printed instructions.

After you have run and marked Guide Meridian No. 1 you are required to

Figure 1. Field notebooks referenced here. Line segments refer to those shown in Figure 2.

<table>
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<td>4-7</td>
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<td>June 30-Sept. 4, 1853</td>
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<td>June 2, 1853</td>
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<td>13-14</td>
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<td>Sept. 24-October 3, 1853</td>
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<td>June 2, 1853</td>
<td>Oct. 6-18, 1853</td>
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<td>24</td>
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<td>25</td>
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<td>July 13-29, 1854</td>
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</tr>
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</table>

Continued on page 28
Standard Parallels and Guide Meridians in Western Minnesota, continued from page 27

survey and establish from the corner to Township 104 & 105 (on) said Meridian a standard parallel or correction line due East to the Mississippi river & when you bear in mind the fact that the Townships below will have to close to this parallel in the manner and with the precision indicated by the accompanying diagram A you will at once see the importance of having said line accurately run with respect to course and measurement.  

Twenty-four miles North or at corner to Towns 108 & 109 (should your Meridian extend so far North, if not, from a point opposite on the boundary of the reservation) you are to run due East another parallel with the same care and accuracy as the first.

The field notes of the above lines with Guide Meridian No. One you are to return to this office property attested with the diagram so soon as the same shall have been completed.

After you have completed the survey of Guide Meridian No. 2 you will from corner to Townships 104 & 105 (on) said Meridian random East from corner to same Townships in Guide Meridian No. One, and returning give the corrected notes to the same. At corner to townships 108 & 109 the same process will be followed; and at corner to Townships 112 & 113 you will run another parallel to the Half Breed Reservation closing regularly to the same and establishing the proper monuments.

Of Guide Meridian No. 2 & the parallels mentioned above you will make a second return to this office as early as practicable.

After the completion of Guide Meridian No. 3 you are to survey in like Manner the parallels which have their starting points at corner to Towns 116 & 117 and 120 & 121. The printed instructions in regard to monuments and all other particulars you will find full and ample and as they are entirely new to the deputies of this office, it is recommended that you use great diligence in becoming master of their contents. I would again call to your attention the fact that too much care cannot be taken in the execution of this work — The price that you are paid is sufficient to ensure the greatest accuracy attainable and should hereafter errors be detected you will recollect that by the terms of your contract you are responsible for the same. It is my earnest desire that the work should be well done & so far as you are concerned I have no fear of the result.

It is expected that the whole will be completed with as much dispatch as accuracy will warrant.

Should the correction which starts from Guide No. 3 corner to Township 120 & 121 intersect the isolated survey made in connection with the reservation at Fort Snelling (which matter has been verbally explained to you) of course you will close to the boundary of said survey without continuing your line farther and observing in all cases to take bearings only in your own work & give the intersection with the nearest corner planted on such survey or Reservation. It is also required that wherever your lines intersect the Mississippi river you will show the connection with some corner of the surveys on the opposite side of the river in order that the relative positions of the surveys on the E & W sides of the Mississippi may be truly shown.

These instructions bear repeating.

1. The Iowa-Minnesota boundary would be a base for the surveys in Minnesota West, thus the line would perform the function of a standard parallel.
2. The lines would be run according to the instructions printed in the Oregon Manual of 1851.
3. The townships would count from the Arkansas Baseline and the ranges from the Fifth Principal Meridian.
4. All lines intersecting the Mississippi River were to be tied to the surveys already completed on the east side.
5. The first Guide Meridian would be run from the Iowa-Minnesota boundary north between R10/11W. Along this line, section and half-section corners were to be established.
   • It was to be double chained. It would close, if necessary, on the Half-breed reservation boundary line.
   • A standard parallel would be run from it and the corner to T104/105N due east to the Mississippi.
   • The lines of townships lying to the south of the parallel would close against it.
   • A second standard parallel would be run from Guide Meridian No. 1 and the corner T108/109N due east to the Mississippi.
   • The field notes for these surveys were to be returned as soon as they were completed.
6. The second Guide Meridian would be run from the Iowa-Minnesota boundary north between R17/18W. Along this line, section and half-section corners were to be established.
   • It was to be doubled chained.
   • Two standard parallels would run between Guide Meridian No. 1 to Guide Meridian No. 2, the first between T104/105N and the second between T108/109N. A random line would be run east, and a corrected line west, for each.
   • A third Standard Parallel would run between T112/
113N from Guide Meridian No. 2 to the Half-breed reservation line. Exactly how was not specified.

- The field notes for these surveys were to be returned as soon as they were completed.

7. The third Guide Meridian would be run from the Iowa-Minnesota boundary north between R24/25W. Along this line, section and half-section corners were to be established.

- A fourth Standard Parallel would run from the Meridian at T116/117N to the Mississippi. Exactly how was not specified; Norris was to survey it “in like Manner,” presumably to the other parallels.

- A fifth Standard Parallel would run from the Meridian at T129/121N to the Fort Snelling military reservation boundary. Again, exactly how was not specified; Norris was to survey “in like Manner.”

Notice that Norris was not instructed to (a) offset Guide Meridians 1 and 2, nor (b) establish the first, second, or third Standard Parallels between Guide Meridians 2 and 3.

On June 6, Lewis wrote to the Commissioner of the General Land Office, Joseph Wilson, explaining the instructions he had given Norris. On June 16, Wilson replied that Lewis had instructed Norris incorrectly and described how the lines were to be run. Lewis relayed the amended instructions to Norris in a letter dated June 24, 1853, writing,

I have just received further instructions for the Commsr of General Land Office which requires an alteration of your instructions in relation to the survey of Guide Meridians & Standard Parallels and you will receive diagrams marked A & B which with the following will fully illustrate the change.

He says “In order to carry out the Oregon method in Minnesota” “your guide meridians (will) necessarily have to be offsetted so” “as to admit the full measure of six miles for townships on the Standard parallels” - viz

Guide Meridian No. 1 will have to be offset 40 chains (on first correction) (to the East) and No. 2 - 20 chains to the East at every 24th mile where it will be intersected by the respective standard parallels, whilst Guide Meridian No. 3 will be run all the way without offsets (see diagram B).

It is supposable that Guide Meridian No. 1 and the parallels E. of it are already surveyed and that you have started at No. 2. If you can correct your work without serious trouble and expense, it would be a very great accommodation to this office, give the commsr much satisfaction, and will not fail to be remembered to your advantage hereafter; but if it is impossible to make the corrections. I cannot require you positively to carry out these instructions as no compensation will be allowed for the same. To make said corrections you will have to move all your corners on Guide Meridian No. One north of the first parallel & to the second 40 chains East and all your section corners on the 1st standard parallel East of the Guide Meridian No.1 will have to be changed to ¼ corners as the Meridian offseted (sic) as directed would start at the 1st post East on your 1st parallel and the qr corner to section corners (whilst on the second correction parallel to the corners would have to be demolished and others established) To establish the line from A to b, the point b must be determined by running a due North line (marked in blue on diagram A) with precise measurement of twenty four miles starting from point a in the Iowa boundary; and then, from the point b run a trial line Westward to A, carefully measuring the same & setting temporarily the mile and ½ mile corners and afterwards correcting and carefully remeasuring back on the line & establishing the same & constructing the true corner boundaries from A through b to the Mississippi river.

The portion of the fourth standard parallel between the 3rd Guide Meridian & the Mississippi river c to d will also be governed by the method above mentioned, but the lines e to f, g to h, i to k will be run at once from the appropriate Meridian due East to the river, and to the half-breed reservation without a random.

The diagrams sent here are the originals & must be carefully preserved & returned to this office as time would not admit of their being copied.

Whatever notes you may have ready to return in conformity to your previous instructions can be sent by the bearer, as well as your report on the character of the country, extent & settlement with any other information which you may have been able to obtain which will be of service to this office in its future operation.

So, in these amended instructions Norris was told to offset the first Guide Meridian 40 chains to the east at each Standard Parallel and the second Guide Meridian 20 chains to the east at each Standard Parallel. Lewis expected that Norris would have already completed the first Guide and asked that he correct it as directed. Note that Lewis stated “I cannot require you positively to carry out these instructions as no compensation will be allowed for the same.” Norris was given explicit instructions on how to establish the first Standard Parallel. He was to run a line 24 miles northward from the Minnesota-Iowa boundary along the line a, b, presumably the line R4/5W to T104/105N, which is where Norris ran his line. He was then to run a random line westward to A, presumably the first Guide, correcting the line eastward through b to the Mississippi River.
On the same day, June 24, Lewis wrote to Commissioner Wilson.

I have the honor to acknowledge the receipt of your letter of instructions of the 16th inst which came to hand this morning. Immediately on the receipt thereof I dispatched a special messenger to Mr. Norris the Deputy engaged in the survey of the Guide Meridians and Standard parallels in Minnesota West of the river but as Mr. Norris has been in the field for some time, I fear that Meridian No. one and the parallels East of it are already surveyed as well as a portion of Meridian No. 2 which would render it impracticable without an entire re-survey North of the first Standard parallel to follow the suggestion contained in your said letter. I cannot compel Mr. N to do this but I have urged him very strongly to comply with my request if at all possible and I believe he will do every thing in his power to comply with your wishes.13

He added — and I can just imagine his frustration,

I regret very much that these instructions had not come to hand sooner. From the map & accompanying instructions of 16th May, I could see nothing that would indicate that the Guide Meridians were to be offsetted, and as they were entirely different from any instructions I have ever seen before, I did not feel authorized to deviate in the slightest from what I conceived to be the strict letter and spirit of them.14

By June 24, Norris, along with his crew, four chainmen — Thomas Simpson, J. O. H. Aveline, A. F. Johnson, W. Kendall, axeman Sidney Wells, and flagman A. Foster — had been in the field more than three weeks. His notes show he ran the first Guide Meridian, which would become the range line between Ranges 10 and 11 from the Minnesota-Iowa boundary to the Mississippi River from June 2 to 28, 1853.15 However, it seems obvious that he had received the amended instructions — because at the corner to T104N he made an offset east of 40 chains along what would become Standard Parallel No. 1.16 At T109N he made another offset of 20 chains along what would become Standard Parallel No. 2.17 He intersected the right bank of the Mississippi River 20.65 links north of the corner between sections 19, 30, 24, and 25. There he set a meander post and gave it a bearing to a flag set on the other side of the river at a meander post marking the intersection of the line between sections 2 and 3 of T22N R14W and the left bank of the River.18 Norris signed the requisite affidavit on June 29, 1853, writing, “The country over which this line passes is elevated & valuable for agricultural purposes. It is well supplied with water & timberland and will soon be occupied by settlers.”19

From June 30 to September 4, 1853, Norris and the same crew members established the first and second Standard Parallels from Guide Meridian No.1 to the Mississippi.20 He ran a line northward from the territorial line between T101N R4/5W to T104N, thus establishing an “end point” for the first standard as directed by Lewis in the amended instructions of June 24. This line took him five days to complete. Then he diverged both from his original instructions, that he run a line due east, and his amended instructions, that he run a random line west and a corrected line east. On September 2, he started at the corner to T104N R10/11W and ran a random line eastward, setting temporary corners as he went, and at 35 miles and 72 chains along the line he intersected the line he had previously run 118 links south of the corner to T104N R4/5.21 He wrote, “The correction will therefore be 3-1/2 links north to the mile.”22 He corrected his line westward, finishing it on September 8.23 He then started at the standard corner to T104N R4/5W and ran eastward to the right bank of the Mississippi, at which point he set a meander post, continuing the line to and across an island, setting meander posts on both sides.24 At the end of his work, which must have occurred September 10 or so, he wrote, “The country over which this line passes is very broken, soil mostly 3d rate. Timber scattering & none very good. Generally well watered by brooks and streams that flow South into Root River.”25 He then turned his attention to Standard Parallel No.2. Beginning at the corner of T109N R10/11W, he ran eastward “on a true line” establishing the appropriate corners. At the intersection of his line with the Mississippi he established a meander post. In his affidavit, dated September 4, he wrote of the country, “The tract of country traversed by this line is broken & only valuable for the timber.”26

On July 28, Norris sent his first returns to Lewis, writing,

Accompanying this, you will receive field notes of Guide Meridian No.1 and also No.2 through Townships 101, 102, 103, 104 North and the first correction from the Second Guide Meridian and the second correction from the first Guide Meridian East to the Mississippi River and also the township line Between Ranges 4 & 5 up to the first correction. I regret that my work has been somewhat delayed by a defect in the adjustment of my instrument.

You will notice that I have extended the 1st Meridian and the 2nd Correction to the Mississippi River. The boundary line of the Sioux half-breed reserve has probably never been run and if so, there is none, now in existence (sic) and I felt required in case such boundary line could not be found to continue mine to the Mississippi, I (word illegible) the Commissioner will see the propriety of compensating me the same as for the balance of the lines.

Continued on page 31
None of the lines above have been run to the main channel of the River. The high water rendered it impossible to extend the lines onto and across the Islands. I would respectfully suggest that the subdividing deputies might be instructed to do this should it be desired to put it under contract.

(Missing words) my return to this part of the work to do it. The distances in all the lines is but trifling.

I am progressing but slowly.

The whole of the tract traverse by my lines will be wanted for settlement and is recommended for survey.27

On August 17, 1853, William J. Neely, appointed to examine the lines established by Norris, reported,

I have made examinations of Guide Mer. No. 1 as per Instruction under date of July (missing date) and (word illegible) have to report that the first 12 miles — (word illegible) of Ranges 10 & 11 of Towns 101 & 102 is not a true meridian, that corners to Towns 101 & 102 is 176 lks too far to the west. But that the (meridian) through Towns 103 & 104 would do if the work North upon Standard parallel No. 1 (word illegible) was correct.

I also would report to you that I have made examination of different portions of Standard Parallel No. 1 and find the work erroneous. And also the first Six miles of the Guide Mer. No 1 of Town 105. And I refer you to accompanying diagram for the figures for such examinations.

In view of the error as Shown by (such) diagram I would suggest that a re-survey should be made of such lines particularly as would be likely to Extend any Errors whether resulting from course of measurement.28

The following day Lewis sent a scathing letter to Norris about the errors in his work.

Your letter of the 29th and the accompanying field notes have been received after being looked for long and anxiously. From reports heretofore received, I learned that much difficulty was experienced in closing to your work, but have never been able to test that matter for want of your notes. It is with much regret that I have to inform you of the full confirmation of these reports and of so bad a character are the errors that a resurvey, in some parts at least, is absolutely necessary. I little expected that such carelessness as is apparent in your work would occur particularly after the many cautions you received. The first guide meridian is not a true meridian at all and in Town 105 there are found two mistallies more on it. The standard parallel East of it is not a straight line, neither is the Range lines in Jones’ work either a meridian or correctly measured.29

On the first standard parallel West of said No.1, the measurement shows the work to be forced outrageously and there is every reason to believe that you have never seen this line, for no Deputy Surveyor would have attempted to average in the way that you have done on this line. You have also thrown a fraction on the last half mile of said parallel which you are perfectly aware is not allowable, but I refer you to Mr. Neely the examining deputy who will explain to you more fully the errors that have been committed, and I would candidly advise you to procure if possible a new set of assistants as I think it will appear pretty plain that those you have are not to be trusted. It was perfectly understood that the meridians were to be double-chained and how two sets of chainmen could pass over the mistallies and bad that has occurred without detecting the errors is more than I can imagine and I think evidently shows to say the least of it willful intention on their part to deceive you. Although this office has been put to great inconvenience and the public interest abused in consequence of the delay and errors above alluded to, still I have entire confidence in your integrity and skill as a surveyor and sincerely hope that your work

Figure 2. Line segments described in this article and the directions in which they appear to have been run.
will be returned at an early day as to meet the expectations of this office.\(^{30}\)

On August 22, Lewis sent the following to deputy John Ball, who was already establishing township exteriors under a contract awarded July 9, writing,

You are hereby authorized to correct the work of Mr. Norris according to the accompanying diagram which you will return by Mr. Neely to this office. You will also find Mr. Neely before you start to make the corrections; his instructions correspond with yours. You or Mr. Neely will endeavour (sic) to see Norris & if in case he is willing to make the corrections you will give up the job to him. Please tell Mr. Neely to see that the remainder of Norris' work is correct and if it is not Mr. Neely must see that he does it & that all his work is strictly standard in measurement.\(^{31}\)

Meanwhile, Norris continued to work under his June 2 contract, establishing Guide Meridian No.2 that ran between R17/18.32 At one corner he noted, "set qr sec post & built mounds with trench per instructions drove charred stake in center & planted Osage orange seed in S.E. corner."\(^{33}\) He arrived at the intersection T103/104N on August 30, ending his line at intersection T104/105N.\(^{34}\) Next, he ran the 1st Standard Parallel.\(^{35}\) On August 31, he noted that he had set a post for corner T104N R17/18W similar to the one he had set above but planting an apple seed in the northwest corner of the trench.\(^{36}\) He ran east on a true line 20 chains where he set a post for the corner T105N R17/18W. He then continued eastward on a random line setting temporary posts and intersected Guide Meridian No.1 at 42 miles 23 chains, 1.57 links north of the corner T105N R10/11W.\(^{37}\) He returned west, correcting his line and set permanent posts. He then continued to run Guide Meridian No.2 northward ending at T108N R17/18W on September 10.\(^{38}\) His crew signed the required affidavits on September 11. He signed an affidavit notarized by Surveyor General Lewis on September 27.

On September 22, 1853 examiner Neely wrote again to Lewis,

In addition to the lines reported in my last report as having been erroneously surveyed, I would beg leave to report that Guide meridian No. 2 from State Boundary up to Standard Parallel No. 2 was found erroneous both in measurement and course, and that the same has been corrected together with those formerly reported viz. Guide meridian No.1 & Standard Parallel No.1 from Guide meridian No. 2 East to the Mississippi River have all been corrected by re-running the same under special instructions to John Ball Esq. U.S. Dep. Sur. the field notes of which have been furnished you.

Where the work had been re-run this far Mr. E.S. Norris

Esq. Dep. for running & c. Meridians & Parallels came & commenced the Survey of Guide meridian No.1 North of Standard Parallel No.1 But with such errors in course and distances that it was impossible for Messrs Ball & Jones to close to (said) Meridian. I immediately to avoid further delay had the same run by John Ball Esq. & herewith furnish the field notes of same line.

In consequence of these errors in Meridians No.1 & No.2 up to Standard Parallel No.2 (illegible word) will have to be re-run to their intersections with the Mississippi River which will be soon done by Mr. Norris.

I have made an examination of different portions of Messrs Ball's and Jones Township lines from the Guide Mer. No.2 East of the Mississippi River & South of Standard Parallel No.1 & find them correct. Lines well run & marked corner posts & trees marked mounds built trenches & Pits dug as per instructions.

I have not visited any of the subdividing Deputies in Minnesota to make examinations but will as work progresses.\(^{39}\)

Norris and his crew, now comprising Thomas Simpson, Sidney Wells, Levi Decker, and John Foster as chainmen, Richard Palmer as axeman, and Alonzo Foster as flagman, continued to survey the second guide meridian.\(^{40}\) He began at the corner of T108N R17/18W and ran an offset 20 chains east. Norris wrote "set post in mound with pits (sic) and trench for corner to T109N of R17 & 18W of 5th P.M. Deposited charred stake & planted Plumb stone at each angle."\(^{41}\) He ran his line north to standard parallel No.3, which he apparently reached on September 17. He made another offset and continued north, intersecting the right bank of the Mississippi 72.45 chains north of the corner 12, 13, 7, 18 to T115N R17/18W.\(^{42}\) He wrote, "Not being able to find a corner on the left bank of the Mississippi River to which to close this line at its N. extremity I continued to search down the stream till I found a Meander post between section 7 & 8 of T26N of R20W of 4th P.M. I then run a line due east from the corner of section 19, 24, 25, & 30 of T115N 280 chains from which said meander post bears N distant 16.60 links. Distance obtained by Trigonometry."\(^{43}\) On September 22, he wrote in his general comments, “The tract of country traversed by this line & adjacent thereto possesses every advantage for agricultural purposes. It is well watered by the Cannon and Vermillion River & their tributaries and is well supplied with timber.”\(^{44}\)

On September 23rd Deputy Ball wrote to Lewis,
After sending to your office by Mr. Larmier the field notes of my Township lines & the field notes of Guide Meridian No.2 & the 1st Standard Parallel I commenced to Township but could not close on Mr. Norris last corrected post (sic) Guide Meridian No.1 of Township 105, 106, 107 & 108. Mr. Neely examined it & found it incorrect & requested me to run it up & I did so & found it badly measured & part of it badly sighted in consequence of Mr. Norris running it up in cloudy weather. I will therefore send the field notes of the same survey to your office by Mr. Neely together with the other corrections of the Meridian in Township 101, 102, 103 & 104 & 1st Standard parallel of Ranges 4, 5, 6, 7, 8, 9 & 10 & shall now proceed with my Township lines as speedy as possible hoping that Mr. Norris will have the patience to run the Standard Parallel No.2 correct. 45

Norris continued his work with his crew, now comprising Sidney Wells and Levi Decker as chainmen, Edward Palmer as axeman, and Alonzo Foster as flagman, running the second standard parallels between guide meridian 1 and 2 from September 24 to October 3. He ran a random line eastward and corrected west on the south side of T109N from R10/11 to R17/18. 46 He then ran standard parallel no.3 from the corner to T113N R17/18W on guide meridian no.2 eastward on a true line to the Mississippi. 47 At 37.40 chains on the south side of section 34 T113NR13W he intersected the right bank of Lake Pepin where he set a meander post. He wrote of the country, “The tract traversed by the foregoing lines is watered by the Cannon, Vermillion, & Embarrass Rivers & their tributaries. All these streams provide abundant water power & mill sites. Settlements are making in various sections & there are several towns of importance on the Mississippi River. It is desirable that it should be surveyed as early as practicable.” 48

The affidavit was notarized by Edward Parker J.P. in Hastings, Dakota County, on November 28, 1853.

On September 26, 1853, Neely reported that Norris had corrected his work. 49

Norris surveyed the southerly 48 miles of Guide Meridian No.3 between October 6 and 13, beginning at the corner to T101N R22/23W on the Territorial line. 50 His daily progress can be charted because he kept note of the dates. On October 10, he set the corner to sections 7, 12, 13, and 18 T105N R24/25W, thus he had traveled 28 miles from the territorial line in four days. The following day he surveyed 3 miles, finishing by setting the corner to sections 25, 30, 31 and 36 T106N R24/25W. The next day he surveyed 8 miles, finishing by setting a witness corner, 7.5 links south of the true corner to sections 13, 18, 19 and 24 T08N R24/25W. The next day, October 13, he set the corner to T108/109N R24/25W, having traveled 3 miles. 51 He wrote of the country, “The southern part of the line is over a level prairie, the soil of which is the richest & best character. Skirts of timber could be seen approaching the line on each side & it will be doubtless soon be wanted for purposes of agriculture. There are also strong indications of coal at no great distance from the surface all along the line. The northern quarter of the line runs through a dense forest of valuable timber & tho (sic) its soil is not as rich as the adjacent Prairie will be wanted for settlement.” 52 He signed his affidavit on November 28.

Norris and his crew of Simpson, Decker, Wells and Foster (chainmen), Edward Palmer (axeman), and Alonzo Foster (flagman), continued the third guide meridian between October 14 and 29 north from T108/109N, reaching the right bank of the Mississippi near an Indian encampment on October 25. 53 Finally, he established standard parallels four and five. First, he ran a true line east along the south side of T117N R21W intersecting the Fort Snelling Military Reserve boundary on October 27, 1853 at 42.64 miles, 420 links north of the corner of sections 19 and 30 T25N R24/25W of the 4th Principal Meridian and set a post. 54 Then, he ran the fifth standard from the corner of T120/121N R24/25W eastwards on a true line to the Mississippi, completing it on October 28. 55 He wrote, “The tract of country traversed by the foregoing lines is all covered with a dense growth of timber & the abounding in marshes & lakes it is well adapted to the purposes of agriculture.” 56

On October 21, the Surveyor General made his annual report for the fiscal year 1852-1853. Glossing over some of the problems with the surveys carried out by Norris he wrote,

As soon as the necessary arrangements and calculations could be made, after the receipt of your instructions of 16th May last, I entered into a contract with E. L. Norris, deputy surveyor, for the establishment of guide meridians Nos.1, 2, and 3, and the proper standard parallels east of said meridians Nos.1 and 2, in the Territory of Minnesota, west of the Mississippi river. From causes entirely unforeseen, the surveys in this portion of my district have not advanced with such rapidity as might have reasonably been expected. Having required to conduct them after the mode prescribed in Oregon and said method, being entirely new to the deputies in this office, and, moreover requiring the greatest accuracy, it is not surprising that some delay should have occurred, and errors have occasionally been made. Owing to a misconception of your instructions, a great part of the work first done by Mr. Norris has to be re-run. This was occasioned by absence of allowance for the convergency of meridians, which your instructions, and the diagram exhibiting the order of survey, failed to set forth, and from examination of which I was led to infer that a new base was designed after the survey had progressed north to a point where
the Mississippi river (the main channel of which is the present dividing line between East and West Minnesota) will cease to be a meandered stream; and that, thereafter, the surveys east and west of said river would be all conducted in the same order. On reception of your letter of the 16th June, stating that such was not your intention, and requiring meridians Nos.1 and 2 to be offsetted, I at once had the necessary corrections made, and feel confident that, for the future, the surveys will progress in this Territory without impediment.

Already have returns been made and submitted of guide meridian No.1, to the Mississippi river, with standard parallels, Nos.1 and 2, east of said meridian; the field notes of guide meridian No.2 have also been received as far north as the corner to townships Nos. 108 and 109, and of the first standard parallel east of said meridian, with all proper township boundaries east of said guide meridian No.2, to the Mississippi river, and south of the first standard parallel.57

On October 23, Lewis awarded William Ashley Jones a contract to run the first standard parallel between the second and third guide meridian. Jones surveyed the line in October, running a random line west and correcting eastwards and wrote, “This standard parallel passes mostly over rolling prairie, much of which is wet but all is fit for cultivation except the marshes. The soil is all 1st rate. Timber very scarce.”58

On November 1, Lewis awarded Norris two contracts: one to establish the second standard parallel between the second and third guide meridians, and the other to establish the third standard parallel between the second and third guide meridians and township lines. It took Norris and his crew — comprising Edward Palmer and Stephen Hart as chainmen, John Foster as axeman, and Charles Horton as flagman — ten days, from November 21 to 30, to run the second standard. He first ran a random line from the third guide east intersecting the second guide at 42 miles 160 links, 200 links north of T109N R17/18W. He corrected westwards 5 links per mile.59 He wrote of the country, “the tract traversed by this line is generally level. The soil is an excellent quality & it is well watered by the tributaries of the Cannon River. It is also well timbered & is therefore well adapted to agricultural purposes & will be immediately settled.”60

On November 28, he made a return to Lewis, writing,

Accompanying please find field notes of survey of that portion of Guide Meridian No 2 that before returned also of No. 3 up to Standard Parallel No 2 and Standard parallel No 2 & 3 from the 2nd Guide Meridian East to the first Guide Meridian and Standard Parallel No 3 from Guide Mer. No 2 East to the Mississippi River. I regret that I have been detained from making these returned for several weeks by cloudy weather and sickness. I trust they will be found to be correct.61

In a postscript he noted, “I ought perhaps to say that the difference in the length of the 1st and 2nd Standard Parallels is accounted for by the fact that the 1st is on open prairie and 20 miles of the 2nd through Hack, Oak & Aspen thickets of the worst character.”62

Norris did not establish the third standard parallel between the second and third guide meridians until the following year. It took him 16 days, from July 13 to 29, 1854.63 He ran a random line westward and corrected back east.64 Part of this line was resurveyed by John Ryan.65 Obviously John Ryan was in the field already when Lewis asked him to correct a portion of the line. The survey, run “pursuant to instructions from Warner Lewis,” was not dated. Ryan began the resurvey at the corner of T112/113N R17/18, on the second guide and ran a random line westward setting temporary corners, intersecting the corner to T112/113N R24/25W on the third guide at 42 miles 70 chains, 12 chains 18 links north.66 He corrected eastward, 18 miles, line between R24W and R21W. Strangely, there was no mention of any evidence of the surveys carried out by Norris.

**Conclusion**

The Oregon Manual of 1851 and ancillary instructions from the Commissioner of the General Land Office required Surveyor General Warner Lewis to run guide meridians and standard parallels before any township exteriors were run in western Minnesota. On June 2, 1853, Lewis awarded Elisha S. Norris a contract to establish both meridians and parallels. The special instructions to Norris were amended sometime after June 24 when Lewis received further directions from the Commissioner on how the guide meridians and standard parallels were to be run. Unsurprisingly perhaps, Norris had difficulties completing his work. Apparently he corrected some of the errors pointed out by the individual appointed to examine his work, William Neely. Apparently another deputy also corrected the errors. None of his field notes, with the exception of the western portion of the third standard (the last one established), seem to have been corrected or superseded.

**Endnotes**


2. The field notebooks will be the subject of a future article. I am not at all sure that I have seen all the relevant correspondence and thus the story of these surveys may be incomplete. In addition, I am unable to reconcile a number of discrepancies between the correspondence and the field notes. Norris had

Continued on page 35
some difficulties and his work had to be corrected. Only a small portion of his field notes are superseded by corrected notes, however (those of John Ryan). I would have expected Norris' notes to have been struck through if subsequently corrected. Similarly, the Surveyor General himself asked John Ball, who was establishing townships in southeast Minnesota, to correct some of the work and, in fact, Ball wrote that he had corrected the work and sent Lewis the notes. I can find no record of those notes. Finally, Norris was awarded additional contracts after he had completed his contract to establish the guide meridian and standard parallels; hardly the reward one would expect from a careless deputy!

The Manual was not seen.

Diagram A not seen.

A portion of this letter was printed in the previous article, supra note 1 p.30. This is a copy of a letter transcribed by Don Borcherding several years ago from a letter in *Letters Sent by the Surveyor General of Wisconsin and Iowa*, Iowa Secretary of State Land Records, Record Group 81. My research shows a gap in the collection of letters sent between May 9, 1853 and December 5, 1853. Clearly my research is incomplete.

For the letter, see article cited supra note 1 p.30.

For the letter, see article cited supra note 1 pp.30-32. Here is a case then when there are four sets of instructions: general instructions and specific instructions from the Surveyor General to the deputy; instructions from the Commissioner of the General Land Office to the Surveyor General; and thus amended special instructions from the Surveyor General to the deputy. See Rod Squires, Some Preliminary Thoughts on Instructions for Surveying the Public Lands in Minnesota. *Minnesota Surveyor* (Summer, 2007) 16-18, 20-21, 23.

Diagrams A and B not seen.

Part of this letter was quoted in the previous article, supra note 1 p.33. This letter was also transcribed by Don Borcherding.

Errors were supposed to be corrected at the deputy's own expense.

Without the diagrams depicting the letters to which Lewis refers, there's no way to know for certain whether Norris followed the instructions.

Without the diagrams depicting the letters to which Lewis refers, there's no way of interpreting the paragraph starting, "The portion of the fourth standard parallel..."

This letter comes from *Letters Sent by the Surveyor General of Wisconsin and Iowa*, Iowa Secretary of State Land Records, Record Group 81 -- but I have no knowledge of the volume and page number.

Id. There is more to the letter, although I have not seen it.

The field notes can be found in Vol. 8 of the field notebooks, Secretary of State records Box 111.J.1.3B at the History Center.

16 Id. p. 25.
17 Id. p. 50.
18 Id. p. 62. On December 27, 1855, Thomas Gilmore would continue the Guide Meridian, past the meander post established by Norris and over the ice to survey the island in the River approximately a mile upstream from Wabasha.
19 Id. p. 68.
20 Vol. 13 of the field notebooks, Secretary of State records Box 111.J.1.4E.
21 The dates in the field notebook do not make sense. There is a two-month gap between when he finishes the first line until the next corner was started. Why was there such a delay?
22 Id. p. 25.
23 Clearly there is a discrepancy in the dates.
24 Was there a gap of 40 chains between the closing corner to T104N R4/5 and the standard corner to T105N R4/5?
25 Id. p. 68.
26 Id. p. 79.
27 *Letters Received*, Secretary of State Land Records, Record Group 81 Box 60. Iowa State Archives.
28 Id.
29 William A Jones was a deputy awarded a contract to establish townships in southeastern Minnesota. He also established the first standard parallel between the third and second guide meridian.
30 *Letters Sent*. Secretary of State Land Records, Record Group 81.Volume F December 5, 1853 - April 25, 1857 Iowa State Archives. Some of the references, to the work of Jones and to the parallels west of the first guide, seem misplaced since Norris had not yet established them.
31 Transcribed letter from Don Borcherding, supra note 1.
32 Vol. 12 of the field notebooks, Secretary of State records Box 111.J.1.4E.
33 Id. p. 4.
34 Id. p. 18.
35 Id. p. 25.
36 Id.
37 Id. p. 26.
38 Id. pp. 27-68.
39 *Letters Received*, Secretary of State Land Records, Record Group 81 Box 60. Iowa State Archives.
40 Vol. 27 of the field notebooks, Secretary of State records Box 111.J.1.4E.
Standard Parallels and Guide Meridians in Western Minnesota, continued from page 35

41 Id. p. 25. I do not know what a “Plumb stone” is.
42 Id. p. 42.
43 Id. p. 43.
44 Id. p. 44.
45 Letters Received, Secretary of State Land Records, Record Group 81 Box 60. Iowa State Archives.
46 Vol. 22 of the field notebooks, Secretary of State records Box 111.J.1.4F pp. 2-43.
47 Id. p. 44.
48 Id. p. 73.
49 Letters Received, Secretary of State Land Records, Record Group 81 Box 60. Iowa State Archives.
50 Vol. 33 of the field notebooks, Secretary of State records Box 111.J.1.4F.
51 Id. pp. 28-45.
52 Id. pp. 50-51.
53 Vol. 52 of the field notebooks, Secretary of State records Box 111.J.1.4F.
54 Id. p. 99.
55 Id. p. 110.
56 Id. p. 113.
58 Vol. 34 p. 45 of the field notebooks, Secretary of State records Box 111.J.1.4F.
59 Vol. 47 of the field notebooks, Secretary of State records Box 111.J.1.4F pp. 1-42.
60 Id p. 43.
61 Letters Received from the Commissioner of the General Land Office 1852-1856. Secretary of State Land Records, Record Group 81 Box 60. Iowa State Archives.
62 Id.
63 Vol. 49.
64 This was the first time he corrected eastward.
65 In vol. 49, several pages are struck through with red lines with a note “see Ryan's resurvey.”
66 Vol. 72 p. 1.
Dan Bemboom Passes Land Surveyor Exam
Bonestroo employee Dan Bemboom recently passed the professional land surveyor exam and is now a registered land surveyor in Minnesota. Dan has provided surveying services to the firm for the past 11 years, working as a crew chief for eight of those years. He currently serves as a survey CAD technician.

Jon Gustafson Passes Land Surveyor Exam
Landform announces that Jon Gustafson, PLS, has become a licensed land surveyor in Minnesota. Jon has been involved in the land surveying industry for seven years and has a wide range of experience in boundary, topographic, ALTA/ACSM Land Title, control, construction, cadastral and record (as-built) surveys. He is also licensed in Wisconsin.

Nancy Lewis Passes Land Surveyor Exam
Nancy Lewis with Westwood Professional Services in Eden Prairie, MN, has become a licensed land surveyor in Minnesota.

Surveyors Honored in Winona County
Roger Brand of Roger W. Brand & Associates in Rochester, MN, was presented with the certificate shown below on behalf of all surveyors who work in Winona County as part of the county’s sesquicentennial celebrations at the Winona County Fair.

Brian Johnson Becomes a Professional Engineer
Landform has announced that Brian Johnson is a licensed Professional Engineer (PE) in the State of Minnesota. Brian’s background encompasses a variety of residential development projects, design-build and large-scale retail centers. He is a Designer in the Retail & Commercial Design Studio.
MSPS Summer Meeting a Great Success

The MSPS Summer Conference, this year sponsored by Chapter 5, was held July 31 and August 1 in Alexandria at Arrowwood Resort and Conference Center. The program featured excellent training sessions and the chapter extend thanks to the following presenters for their valuable presentations:

- Frontier Precision’s Steve Richter, Wes Schneider, and Dustin Harr for the presentation, “Future of Laser Scanning.”
- Messerli & Kramer’s Nancy Haas for the very informative legislative update.
- David Meyers, Tim Sime, John Kolb and Igor Lenzner of Rinke-Noonan for the presentation, “Is it a Road?”

Special thanks as well to Frontier Precision for sponsoring the Ice Breaker social Thursday Evening. The Ice Breaker featured “Surveyor Olympics,” a test of skills at which many tried their hand.

Also, many thanks to Heather Hinton of Arrowwood Resort for the planning and the follow through for the conference.

2008 MSPS Golf Results

Thursday’s 2-Person Scramble consisted of 14 teams. Congratulations to the following winners:

First Place: Bruce and Kathy Buxton
Women’s Long Drive: Wendy Otto
Women’s Closest to the Pin: Wendy Otto
Men’s Long Drive: Dan Skinner
Men’s Long Putt: Jim Boerhave
Men’s Closest to the Pin: Peter Blethen

The Members Tournament on Friday had 24 players competing.

First Place (both low gross & low net): Dan Kron won the Traveling Trophy
Long Drive: Peter Blethen
Long Putt: Scott Bergherr
Closest to the Pin: Dan McAnanich
MSPS Surveyor Olympics Results

The MSPS Surveyor Olympics were held as part of the 2008 Summer Meeting. Nearly 30 people participated in at least one of the five events. Here are the winners:

Horizontal Angle Estimating: Dick Walter estimated 59 degrees, 32 minutes, 30 seconds; the actual measurement was 60 degrees, 7 minutes, 50 seconds.

Distance Estimating: Garrett Borowicz estimated 567 feet and the actual was 594.29 feet.

Elevation Difference Estimating: Luke Landecker estimated 15.678 feet and the actual measurement was 15.62.

Chain Throwing: Charlie Christopherson’s winning time was 52 seconds. More than 20 people participated, including a “battle of the sexes” between Garrett and Jennifer Borowicz.

Pacing: Pete Blethen estimated 382.513 feet and the actual measurement was 381.13 feet.

Thanks to all who participated in this fun event! In addition to the Olympics, members participated in golf tournaments and the informative educational sessions.

At right, national chain throwing champ Ed Otto shows Executive Director Eric Ewald “how it’s done.”
The following item appeared in the *Northland Press*, Crosslake, Minnesota. It was sent to the MSPS office by David Landecker, by way of his father, Myron.

**Destination: The Lost Forty**

Photo of Lost Forty survey crew

Josiah A. King and the Lost Forty Crew — photo courtesy of the National Forest Service

The year is 1882. Josiah A. King and his three-man survey crew travel 40 miles from the nearest white settlement "the Grand Rapids of the Mississippi."

For a month, canvas tents are their homes and flour, pork, beans, and dried apples their rations. Josiah and his crew are finishing the last of three contracted townships in one of the first land surveys of Minnesota's north woods.

November winds swirl snow around the hearty men as they survey the six square mile area between Moose and Coddington Lakes. Perhaps it was the chilling weather, or all the desolate swamps that caused the crew to plot Coddington Lake about a half mile further northwest than it actually lies.

But Josiah’s error is our fortune. Since the towering pines were mapped as being under water, this mapping error caused the virgin pine of the area to be left behind by loggers. The Lost Forty is quite a bit bigger than it's name implies; in reality, the area comprises a total of 144 acres.

Like our National Monuments in Washington, D.C., the old growth pines of the Lost Forty bear witness to our heritage. The white and red pines are 300-400 years old, originating when the pilgrims arrived. The huge trees remain as remnants of the natural resources that drew people to new frontiers; shaping America’s character.

Most of the mature red and white pine can be found on the east end of the Lost Forty. The trees are up to 350 years old and between 22 and 48 inches in diameter. Other areas of the forest are managed for pulp, lumber, wildlife and aesthetics, and the trees are harvested at about 80 to 150 years.

Biologically, pine trees can live up to 500 years. Most of the aspen growing in the area is about 60 years old and has begun to deteriorate. Aspen reaches its biological old age at about 85 years.

Old growth such as the Lost Forty is valuable for wildlife, including bald eagles, a num-

Walking among the Lost Forty’s old growth near Blackduck, MN

I came across this book in the course of doing research for a presentation to elementary students. Even second-graders have heard of Mt. Everest, and telling the story of how its height was measured was a way to introduce them to the subject of survey equipment and surveying techniques. The story was even more interesting than I expected. John Keay, the author of a dozen other books on historical subjects, has written a concise and readable history of the Survey of India, probably the greatest surveying project of the 19th century and remarkably advanced for its time.

Surveys and maps of the Indian subcontinent became important in the late 1700s due to the expansion of British trade and conquest. Trade was in the hands of the East India Company, which functioned for all practical purposes as a subsidiary of the British government. Accumulating vast wealth from its trade monopoly, the Company was allowed to maintain its own armed forces, conquer territory, and collect local taxes. To do these things, maps were needed.

The first maps were made by traditional military methods, using compass, chain, odometer and clinometer, with scattered astronomical observations for control. No one was very happy with them. William Lambton, who arrived in India in 1796 as an army lieutenant, knew it was possible to establish better control by triangulation. Lambton had been stationed for 13 years in New Brunswick, Canada, doing cadastral surveys. During the long winters, he had evidently spent much of his time studying astronomy, geodesy, and mathematics. His zeal for astronomy was such that he was partially blind in his left eye, the result of taking a sun shot without an adequate filter. Aided by his friendship with Arthur Wellesley, later known as the Duke of Wellington, Lambton proposed a triangulation network beginning at Madras, near the southern tip of India. In 1800 his proposal was approved by the Company, and he set about acquiring suitable equipment.

Lambton's first 7.5 mile baseline, near Madras, was measured in the spring of 1802 with a 100-foot chain consisting of 2.5-foot steel bars joined with brass hinges. Expansion due to temperature was a constant concern, and required laborious calibration and adjustments. To measure angles, he ordered from England an instrument that became known as the Great Theodolite, with a 36-inch horizontal circle. The ship carrying it was captured by the French, with whom England was then at war. But when the French realized what they had, they sent the instrument on to Madras, along with a polite note expressing their support for science.

From this baseline, Lambton's first triangulation series extended southerly along the coast from Madras. Its purpose was to determine the local length of a degree of latitude, needed for preliminary correction factors to adjust the trigonometry for the curvature of the earth. He then ran a chain of triangles in a grid rather than covering the entire country with stations. For work in flat terrain, he designed a double tower, with independent support for angles westerly from Madras, and began a north-south series following the 78th meridian of East longitude, a part of what was later known as the Great Arc.

Lambton had originally planned to extend the Arc through two or three degrees of latitude. But he and his assistant, George Everest (he pronounced his name “eve-"r") soon became obsessed with the idea of triangulating from the extreme southern tip of India to the foothills of the Himalayas, over 20 degrees of latitude and a distance of about 1,600 miles. This network, along with other triangulation, would of course provide control for the local surveys and topographic maps that the Company wanted. But it would also measure the earth’s curvature, in the southern hemisphere, far more accurately than anyone had previously done. To complete the Great Arc, both Lambton and Everest had to spend some of their time placating Company officials, who wanted local maps as the first priority and had little interest in geodesy.

Everest began work with the Survey in 1818, and succeeded Lambton when the latter died of fever in early 1823. He introduced many improved methods. He originated the practice of making night observations to lighted signals, and that of running chains of triangles in a grid rather than covering the entire country with stations. For work in flat terrain, he designed a double tower, with independent support for...
the instrument, on the same principle as the Bailey towers used in modern times. These towers, built of timber and bamboo, proved less stable than he had hoped when loaded with the 1,000-pound Great Theodolite. In the end, in areas where no hills or mountains were available, Everest used the timber towers for preliminary triangulation but had 60-foot brick towers built for the final observations.

It would be hard to overstate the practical difficulties of carrying on the Survey. Dense jungles, suspicious natives, and monsoon rains slowed the fieldwork. Many desirable hilltop locations for triangulation stations were occupied by bands of armed men, loyal to local rulers. Tigers stalked the crews. In 1808, the Great Theodolite was dropped and badly damaged while it was being hoisted to an observation point atop a 200-foot temple; Lambton spent six weeks repairing it with the aid of his head instrument maker. Malaria and other tropical diseases took hundreds of lives. Everest had to leave India for five years to recover his health. He spent the time productively by re-working his calculations, lobbying for financial support, and acquiring new equipment, returning with a set of temperature-compensating bars for measuring baselines.

Everest retired in 1843, with the Great Arc completed. In addition to surveying the Arc, he and his successor, A. S. Waugh, covered most of India with a triangulation grid. From the northerly stations, vertical and horizontal angles were read to Himalayan mountain peaks, some more than 100 miles away. In 1856, Waugh reported that the summit designated as “Peak XV” might well be the world’s highest, and proposed naming it for Everest. The name stuck, despite some argument. It seems unlikely that Everest himself ever saw the mountain.

Since the book was written for a general audience, it contains less technical detail than a surveyor might prefer. I would have been interested in knowing more about the Great Theodolite and other equipment used; and more maps, of higher quality, would have been desirable. But it is nevertheless valuable historical background for surveyors. And members of the public are likely to be impressed by the little-known story of how surveyors discovered the world’s highest mountain, and how it was named for one of them.
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