

UTAH Foresights



Vol. 42

UTAH COUNCIL OF LAND SURVEYORS

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“To protect and promote the Land Surveying Profession by setting high standards and providing education for the members and general public.”



Who is This? Page 12



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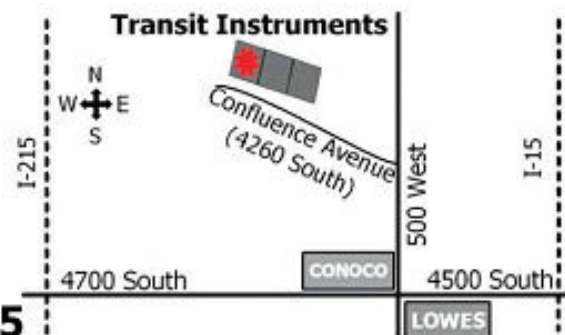
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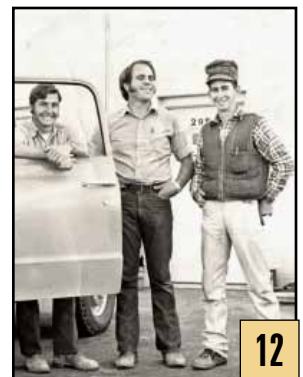
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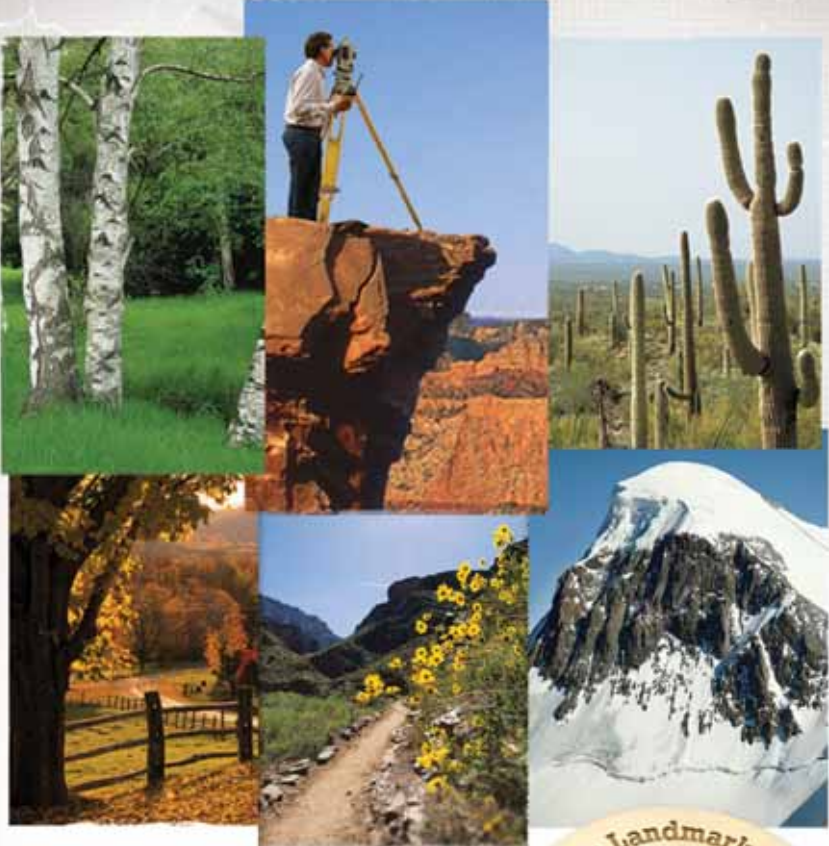


The National Museum of Surveying Announces "Museum Preview Night"

The National Museum of Surveying is pleased to announce the first event at the new Museum in Springfield, Illinois. "Museum Preview Night" will be held on surveyor Abraham Lincoln's 200th birthday, Thursday evening, February 12, 2009 at the Museum which is literally across the street from the Old State Capitol where Lincoln served as Illinois State Representative and where he gave his famous "House Divided" speech. The party will be held in conjunction with the Illinois Professional Land Surveyors Annual Conference. To celebrate Lincoln's bicentennial birthday, Lincoln scholars from around the world will be in Springfield that day for symposia on Lincoln's life. So will we surveyors, to celebrate Lincoln and the opening of the National Museum of Surveying.

Not all of the displays will be completed by that date, but the extensive interior renovations are complete, "Science on a Sphere" (one focal point of the Museum) is complete and a wide representation of early American surveying equipment is on display. To accommodate our group and the Lincoln scholars and aficionados, that evening, the Old State Capitol Building (across the street) will be open for viewing and tours. It will be quite a night for our Museum, its members and surveyors, generally. Drinks and hors d'oeuvres will be served. Tickets will be \$15.

For more information, tickets and reservations, see: www.iplsa.org or email: mchurch245@aol.com.



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Chairman's Message

By Ken Hamblin

I hope everyone had a great Holiday Season and the New Year looks brighter and full of hope. I know that every one of us have felt the effects of the poor economy. This may become a problem as so many surveyors have to find employment in other fields just to survive this recession.



Not long ago I was asked to place five control points around the perimeter of a parcel that was being subdivided. This took all of two hours. I sent the coordinates and elevations to the engineer who had prepared the grading plan for the subdivision. I had previously performed the boundary survey and the topography map for this subdivision. About three weeks later I was asked to stake the front lot corners with the elevations at a five foot offset and a point near the rear lot corners and the location of a block wall that was being built around the perimeter of the subdivision. When the crew arrived, it looked to them that the subdivision had been graded. They set the corners with the elevations as requested and left. The next time we were called to come back, it was to perform the final staking of the subdivision and when the crew got there, the roads were paved with curb & gutter and all of the improvements were in place.

We spent a total of three days of construction staking and one day preparing



an as-built survey of which everything fit the plans very well. I visited the contractor and looked at his equipment which had been equipped with GPS receivers that controlled the blade of the equipment. He also had a GPS unit that was used to set the sewer and other improvements as needed. He was very careful not to set the corners that affected the boundary of the project or the boundary of the lots and the centerline control monuments (all tasks of the surveyor), even though he had the capability of doing that work.

Construction staking that fueled the profitability of many surveyors in the past could in all possibility be relegated to a minor portion of the subdivision process by the very technology that was designed to make the land surveyor more profitable. There are a few of us who are strictly boundary surveyors - which most of us aspire to be but, in my opinion, are in the minority of the land surveyors practicing today because it just "isn't where the money is."

On a lighter note, many years ago in about 1973 I believe, my good friend and mentor Stuart Lane and I were in Flagstaff

Arizona, with the task of placing aerial panel points out for a new Arnold Palmer designed golf course. Now this golf course was pretty heavily wooded with large Ponderosa pine trees and we had to clear some of the trees to make these panels visible to the airplane. We would follow Arnold around marking the greens elbows and tees for this golf course. On one particular green, a rather large tree had to be removed and with the guidance

of the tree and it started to fall in the direction of Arnold and the trucks we were using. Well, to make a long story short, the tree fell between the two trucks just missing the one that Arnold was riding around in. There was one slight problem because the driver had left the door open and that tree fell right in the middle of the open door almost tipping the truck on its side. We would have

There are a few of us who are strictly boundary surveyors — which most of us aspire to be but, in my opinion, are in the minority of the land surveyors practicing today because it just “isn’t where the money is.”

of Stuart, we got the chainsaw out and proceeded to cut the tree down. We had been pretty lucky (not skillful) on other trees as we got the trees to fall in the direction we wanted them to. This tree was taller than the others and the wind was blowing. The tree started to lean the direction we wanted it to fall when the wind suddenly caught the top

been tickled if it had been our old and beat up truck, but it happened to be a brand new Chevy Blazer. Moral of this story – None. Have a good laugh till next time.

Answers to Quiz

1. A
2. C
3. D
4. A and C
5. B
6. D
7. B
8. A, B and D. Sixteenth corners were sometimes set when specific instructions were issued such as the “3-mile” subdivision of sections on some Indian reservations.
9. D
10. C



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Salt Lake Chapter Report

By Chapter President: Michael Nadeau, PLS/CFedS



As my term as the Salt Lake Chapter President comes to a close, I can't help but reflect back on the great year we have had. This of course, not because of me, but because of the great membership we have in the UCLS. I would like to thank each and every person who has attended the luncheons this year, as well as each and every guest speaker we have had at every luncheon. This year would not have gone as well as it did, without you!

We have had three awesome luncheons since my last chapter report. The first was another panel discussion with Mark Gregersen as the moderator and his panel members were John Stahl, Marty Shearer, and BYU law professor David Thomas. This was a great discussion of a case that involved the decision to hold the deed of record or possession on the ground. This was a fun topic and some great questions were raised. The next luncheon had Marty Shearer and

Matt Clark come in and discuss the Standards and Ethics Committee's task of re-visiting the UCLS Model Standards of Practice for Boundary Surveys, which was originally adopted in 1999. We had an interactive look at a couple of recorded surveys and the use of the Survey Narratives on each survey. This was a discussion that I think a lot of us will remember for a long time to come, especially when we are writing up our own Survey Narratives! The third luncheon brought us a great presentation

by Aero-graphics on the use of their new digital camera technology. Sid Pawar, of Aero-graphics, was very informative with his discussion, and there was a great question and answer session done by him and Casey Francis. This discussion makes you realize just how far technology has come!

In closing, I would like to remind everyone who has attended a luncheon in the Salt Lake Chapter (and signed in on the roster) that you will receive a certificate at the end of the year stating how many continuing education credits you have accumulated throughout the year (between March 2008 and January 2009). This worked well last year, so we decided to do the same thing again this year. If anybody has questions, concerns, or comments, I can always be reached at mnadeau@merid-eng.com.

National Association of Professional Surveyors

Fall Meeting — Arlington, Virginia

September 25-27, 2008

Steve Keisel, P.L.S. Utah NSPS Governor

As the elected representative from the Utah Council of Land Surveyors, I represented the UCLS by attending the fall meetings of the National Association of Professional Surveyors (NSPS) and participated in the following:

- Thursday, September 25 – Lobby Day on the United States Capitol
- Friday, September 26 – NSPS Trig-Star Committee
- Friday, September 26 – Western States Governors Council
- Saturday, September 27 – NSPS Board of Governors / Board of Directors Joint Reports
- Saturday, September 27 – ACSM Annual Conference Planning Committee

I invite you to review the numerous reports which were submitted and will be made available on the UCLS website.



The next regularly scheduled NSPS meeting will be held during the joint WestFED-ACSM-UCLS-MARLS conference in Salt Lake City on February 20, 2009.

Please let myself, or a member of the UCLS Executive Board be aware of any survey issues or concerns that you would like addressed on a national level.

SAVE THE DATE!



ACSM-MARLS-UCLS-WFPS CONFERENCE 2009

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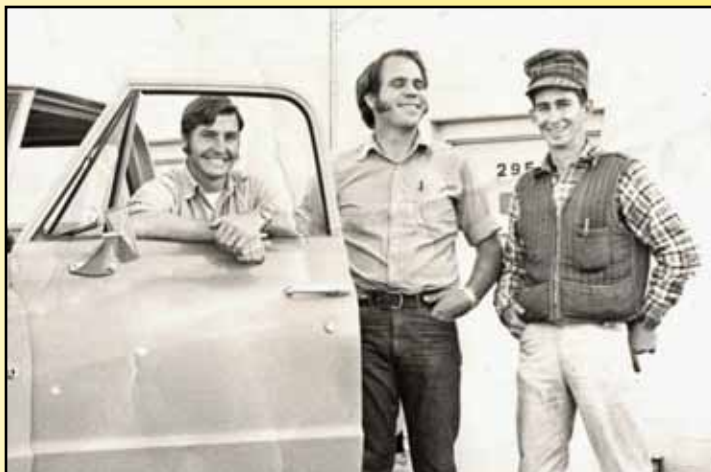
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"Who is This?"

A prize will be awarded to the person guessing who this surveyor is. The surveyor in question is the person in the middle. If we have multiple correct guesses the winner will be selected in a random drawing.

(If you have a surveying picture send it in for the next issue)



Last issue: Who is This?



The surveyor in the Fall issue's "Who is This?" was Robin Beasley and the winner with the correct guess was James Olschewski.



We're green!

Newsletters Ink has received its certifications in the SFI (*Sustainable Forest Initiative*) and FSC (*Forest Stewardship Council*) programs, which are based on the premise that responsible environmental behavior and sound business decisions can coexist to the benefit of landowners, manufacturers, shareholders, customers, the people they serve, the environment, and future generations.

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THE GEOMATICS TECHNOLOGY PROGRAM

Mission

The program mission emphasizes producing Geomatics/Surveying graduates trained on real surveying projects to implement theoretical knowledge in real-life situations. This training was obtained by working as a team in class case studies. The program mission statement—"We measure our Quality of Education by the Success of our Graduates in the Workplace"—implies certain similarity between quality education and quality management, in that both have the same objective—satisfaction of the end product (Wissa 1999). The end product in construction is construction quality that meets the specification and design requirements of a functional facility (Wissa 1986). For education, it is the graduate who meets the industry requirements of a functional organization. In addition to the graduate employer's input to the graduates' quality of work, the validity of the mission is being continuously valued by the number of graduates who have passed their Fundamentals of Surveying and have become certified as Land Surveyors in Training (LSIT) and, subsequently, as Professional Land Surveyors (PLS). The following tools were used to assess the program mission:

1) Survey of graduates' employers.

This survey had two parts. The first part was a questionnaire intended to obtain information about the objectives of the program. The employers were satisfied with the graduates' performances. The second part included comments, largely positive, made by the employers about students' problem solving skills, knowledge of field and office areas of surveying, and work ethics. The areas identified as needing improvement included more practical application of theoretical knowledge, courses on legal issues in surveying, and better knowledge of issues in error/precision management.

2) Results of the survey of graduates.

This survey also had two parts. The first part contained questionnaires about program outcomes demonstrating the competency of graduates in geomatics technology. The survey rated the graduates' understanding of, and ability in, geomatics as "very good," except for items 4, 10, and 11 which are between "good" and "very good." The second part addresses major strengths in education and areas of improvements in geomatics technology. Students identified the strength of the program

By Maher Wissa and Rajendra R. Bajracharya
Part one of a four part article.

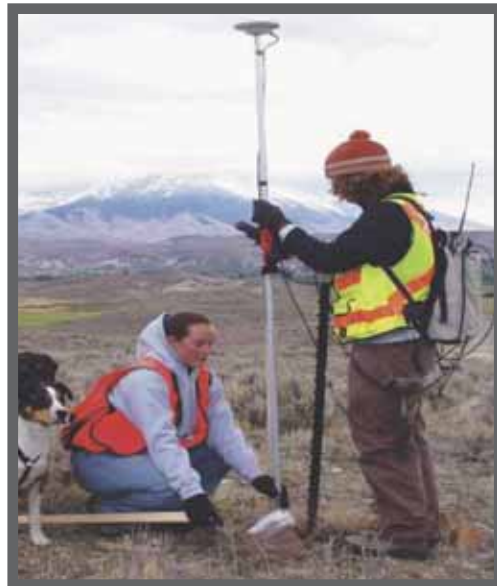
Abstract:

The Geomatics Technology Program at Idaho State University was tailored to meet the challenge of creating a four-year Geomatics Technology curriculum that provides graduates with the necessary tools to succeed in the workplace and gain professional licensing. The curriculum was developed based on our two-year Civil Engineering Technology program with input from government, industry, and local professional land surveyors. This paper discusses the program's mission, structure, curriculum, and components and student involvement in a variety of real boundary or public land surveying projects. These projects are classified as case studies or capstone projects. The program also offers a noncredit preparation course for the State Board Examination to obtain a land surveyor-in-training certificate. Remember: "For Quality There Is No Quitting Time," (M. Wissa).

Introduction

The Geomatics Technology Program at Idaho State University (ISU) was created through the efforts of the Idaho Society of Professional Land Surveyors to provide a four-year degree encompassing education and training in surveying and mapping, satellite positioning, and land information systems. The program was sponsored by the Idaho Governor's Initiative for Excellence in Education (Anonymous 2005) to meet the needs of the business sector. The creation of the Geomatics Technology Program became essential to meeting the new requirement of professional licensing of land surveyors established by the Idaho State Board of Professional Engineers and Professional Land Surveyors effective July 2010. This program was built upon the Associate of Applied Science degree in Civil Engineering Technology (CET) established in 1965 at the ISU College of Technology. This allowed CET students to continue on to the Geomatics Technology Bachelor of Science (BS) degree by completing four to five semesters of Geomatics and general university requirement courses. The ISU Geomatics Technology Program has been accredited (Askey 2006) by The Accreditation Board for Engineering and Technology—Technology Accreditation Commission (ABET – TAC).

to be: understanding the Public Land Survey System, use of equipment, proficiency in CAD, understanding different coordinate systems, hands-on training preparing graduates for work in the surveying profession, and excellent theoretical background throughout the program. In terms of improvements, the responses highlighted the need to spend more time working with a licensed surveyor, more knowledge of mineral survey and water boundary, more specialized topics and projects, more course work on legal principles, and more field work and software analysis.



3) Advisory Committee Program annual meetings— Employer's feedback on graduates.

4) Graduate placements since the first graduation class in May 2003 have been 100 percent.

5) Results of State Board Licensing Exams—Out of 18 graduates:

- Nine graduates have successfully obtained LSIT certificates; and
- Five graduates who passed the LSIT exams have also received State PLS licenses.

Structure

The ISU Geomatics Technology Program has been structured to allow high-school graduates to choose to enroll in the four-year Bachelor of Science degree program in Geomatics Technology or in the two-year Associate degree program in Civil Engineering Technology and later continue with the four-year degree program. The latter option gives students the advantage of earning two degrees upon completion of the Geomatics Technology Program. The program is housed on the main campus of Idaho State University in Pocatello, Idaho. Due to the population spread in the State of Idaho, it became necessary to offer several junior- and senior-level courses through two-way, audio-video distance learning at ISU centers at different geographic locations (Figure 1). The majority of junior- and senior-level courses are offered once a week in late afternoon. This is for the convenience of part-time students working in the survey industry, as well as full-time students who need to work to support their education. One of the Geomatics courses, "Essentials of Surveying," is offered on Friday afternoons, and its focus is on preparation for the national exam in Fundamentals of Surveying necessary to obtain a LSIT classification.

Curriculum

A total of 132 credits are required for a Bachelor of Science degree in Geomatics Technology. There are 39 credits in the upper division courses (300 and 400 level courses) and 37 credits in the 100 and 200 level, including six credits for courses in Computer Aided Drafting (CAD) and Civil Engineering Drafting. The remaining credits can be obtained by taking the university general education requirement courses. The sequence of courses (available at <http://www.isu.edu/>

[ctech/geomatics.shtml](#)) that a student in Geomatics Technology is required to take in different semesters is shown in Appendix D.

Components

The Geomatics Technology Program comprises students, faculty, facilities, scholarships, the advisory committee, department support, and administration. Currently, there are 23 full-time and 11 part-time students enrolled in the Geomatics Technology Program. A majority of the students came from Civil Engineering Technology after completing an Associate degree in CET. There are two faculty members teaching 300 and 400 level courses in Geomatics Technology (GEMT) at the main campus, and two adjunct faculty members at ISU Boise teaching 100 and 200 level courses. The 100 and 200 level courses in GEMT at the main campus are taught by CET faculty. There are three faculty members in CET:

two full-time and one adjunct. The Geomatics Technology program is housed in the Roy F. Christensen Building. Geomatics Technology shares classroom and laboratory rooms with the Civil Engineering Technology Program. Both rooms are equipped with sixteen computers, computer projector, digital presenter, smart board, and Internet. Each student is allocated a computer during a class/laboratory session. Equipment includes seven dual-frequency Global Positioning System (GPS) receivers, two mapping-grade receivers, four total stations (including one robotic and one smart station), eight stereoscopes, and one gravimeter (in Geosciences Department). Students have access to up-to-date software, including:

- CAD and Surveying/Coordinate Geometry (COGO): AutoCAD, SurvCAD, Land Development desktop, Foresight, MicroStation, and Starplus;
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- Photogrammetry: Leica Photogrammetry Suite with stereo analyst, aero-triangulation and automatic terrain extraction software; and
- Other: Matlab and Microsoft office.

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JOIN US IN SALT LAKE CITY

Whether you, like many others, are experiencing a slow-down in work during the current economy or if your work schedule is as busy as ever, I want to personally invite you to the 2009 ACSM/MARLS/UCLS/WFPS Conference.

The always successful combination of the American Congress on Surveying and Mapping and the Western Federation of Professional Surveyors (combined this time with the Montana Association of Registered Land Surveyors and the Utah Council of Surveyors) is once again offering a dynamic program of workshops that will provide all of the continuing education credits you will need to meet your state's requirements.

This year, though, we have also planned a fantastic social program that is sure to be lots of fun for you and your family. One of our leaders recently stated that the conferences he remembers most are the ones in which some activity outside of meetings and workshops was a highlight. Be sure to check out the planned and "on your own" activities listed on the facing page and in the conference program booklet.

One element of the social calendar this year that is worth mentioning in particular is the spouse program that includes "Six in the City Day." In recent years, many of our attendees have commented that they miss the days when their spouses were as excited to come to an ACSM conference as were they. We hope this year's program brings back those days.

We have also brought back an opening ceremony with a keynote speaker. You will be able to hear perspectives on the future of

our profession from Leica Geosystems, Inc. president/CEO Ken Mooyman.

The annual ACSM conference presents a great opportunity to interact with fellow professionals from across the entire country. The impromptu meetings in the hallways or in the exhibit hall often spawn relationships that last a lifetime and provide a resource for discussion about issues that may not be as easily accomplished with friends from just down the road or even in your home state.

Participants also get to directly interact with highly respected leaders in the profession and in the industry that supports it.

I want to personally thank you for your support of ACSM, and its conferences, throughout the years. We strive to ever improve the program (both educational and social) in order to warrant your continued support.

This year, we and our partners MARLS, UCLS, and WFPS have gone all out to make this a Conference to Remember.

Please join us!

Curt Sumner, LS

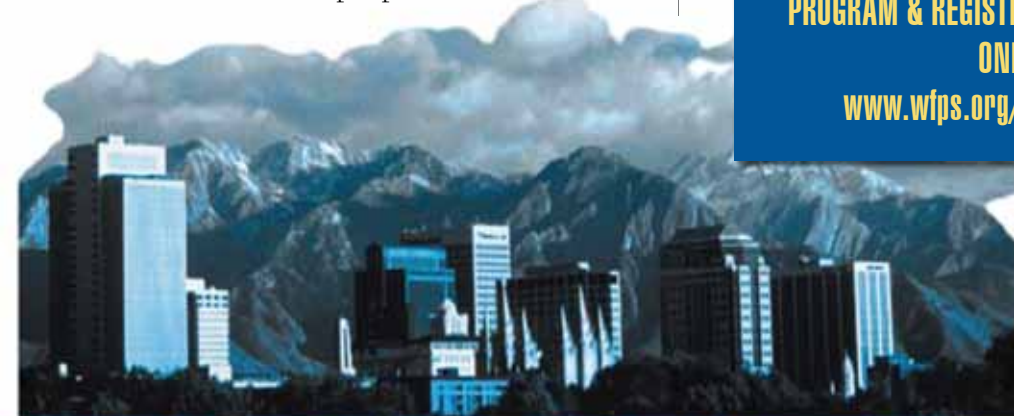
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Planned Conference Activities Include:

ACSM Awards Banquet, ACSM PAC and MARLS/UCLS Scholarship Auction, Tour of Olympic Facility, Spouse Tours & Programs, Genealogy Class and Ski Trip.

Other Activities & Sights Include:

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Foresights Quiz 1

1. A federal patent is equivalent to a:

- A. Quit-claim deed
- B. Warranty deed
- C. Special Warranty deed
- D. Trust Deed

2. The first nationally circulated, formal set of instructions for the Public Land Survey System was:

- A. The Oregon Instructions of 1851
- B. The 1973 Manual of Instructions
- C. The 1855 Manual of Instructions
- D. The Jefferson Directive

3. GLO/BLM plats are always recorded in:

- A. The County Courthouse
- B. State Board of Registration files
- C. State surveying association files
- D. Official federal records

4. Which of the following situations contributed to the creation of the PLSS? (Check all that apply)

- A. National debt from the Revolutionary War
- B. Desire to conquer France
- C. Desire to occupy lands before other European nation did
- D. Too expensive to administer the excess federal lands.

5. The basis of bearings for the Public Land Survey System is:

- A. Grid North
- B. Astronomic North
- C. Magnetic North
- D. Magnetic North prior to the solar compass

6. A “government lot” is:

- A. Any parcel in the Public Land Survey System
- B. A non-rectangular parcel
- C. An aliquot part
- D. A non-aliquot subdivision of a section

7. Generally, north/south section lines are to be:

- A. Parallel to the west township boundary
- B. Parallel to the east township boundary
- C. Due North
- D. A mean of the east and west township boundaries

8. Generally, what corners were set in an original GLO survey? (Check all that apply)

- A. Section Corners
- B. Meander corners if meandered water was present
- C. 1/16th corners
- D. Exterior 1/4 corners

9. A meander line on a non-tidal water body is:

- A. A fixed boundary
- B. A proposed boundary
- C. An approximation of the property line
- D. An approximation of the mean high water line

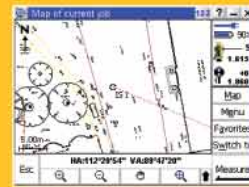
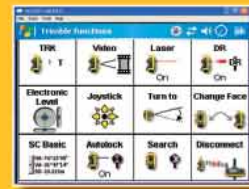
10. The term “unsurveyed” on a GLO plat indicates the:

- A. Original survey was found to be fraudulent
- B. Terrain was too difficult to survey
- C. Area was not suitable for agricultural homesteading
- D. Township was done by photogrammetry with no monuments set

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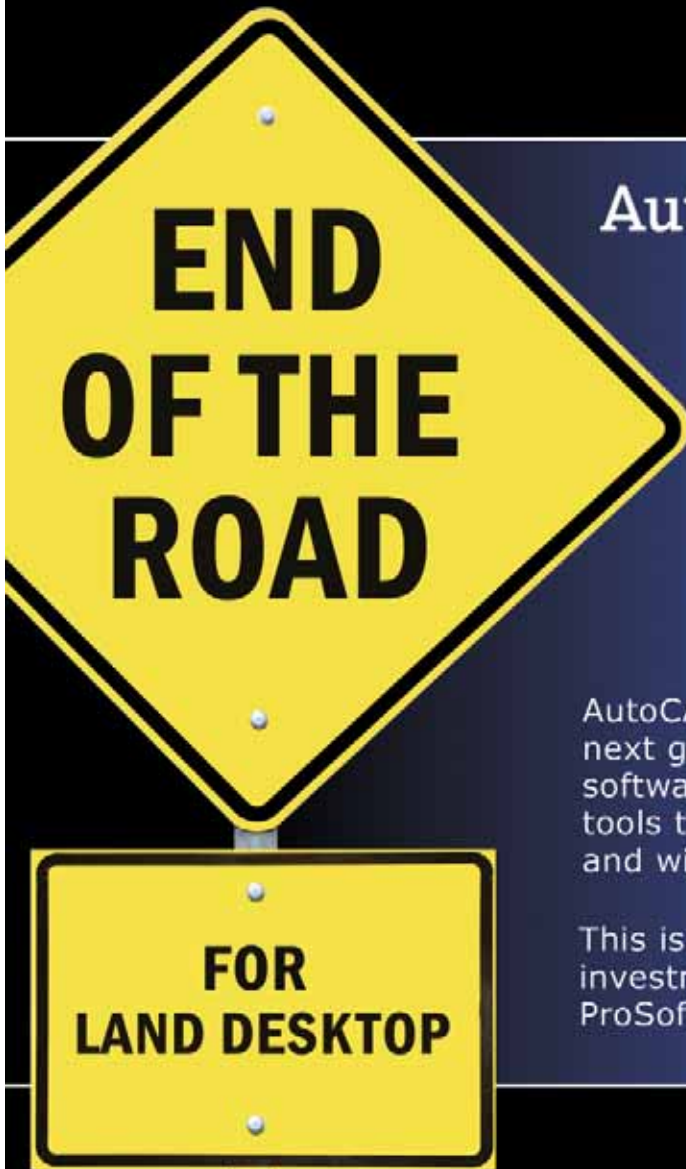
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