

HOOSIER SURVEYOR



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PROFESSIONAL LAND SURVEYORS, INC.

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AFFILIATED WITH THE
AMERICAN CONGRESS ON
SURVEYING & MAPPING



Vincennes Technology Center Building, Vincennes, Indiana

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EDITORS NOTE

Deadlines for copy for various planned issues of the Hoosier Surveyor are as follows: Winter - December 31; Spring - March 31; Summer - June 30; Fall - September 30.

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Articles and columns appearing in this publication do not necessarily reflect the viewpoints of ISPLS or the Hoosier Surveyor staff, but are published as a service to its members, the general public and for the betterment of the surveying profession. No responsibility is assumed for errors, misquotes or omissions as to its contents.

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ISPLS BOARD OF DIRECTORS (2002)

l to r, first row, John Updike, Fort Wayne; Rich Hudson, Valparaiso; Bradley Ott, Franklin; John McNamara, South Bend; Don Bengel, Valparaiso; Frank Ballintyn, New Albany; second row, Perry Cloyd, Edinburgh; Ted Darnall, Edinburgh; Anthony Gregory, Hobart; Richard Miller, Indianapolis; William Clark, Vincennes; Absent from picture was Greg Garrison, Boggsstown.

PRESIDENT'S THOUGHTS

by William Clark, PLS, Vincennes Indiana



With this issue of the Hoosier Surveyor we are using a theme-based format, the theme being education. Individual articles on the Indiana colleges that have surveying curriculums are featured. Also articles on mandatory continuing education, the Certified Surveying Technician Pro-

gram (CST), Trig Star and the licensing exam review are included. The number one priority of the ISPLS should be to provide and support educational efforts.

By the time you receive this issue, mandatory continuing education seminars will have been held in Warsaw, Lebanon and Evansville. The education committee schedules the mandatory seminars regionally in March and October. In addition to these three seminars, the fall seminar was held at Vincennes University on November 8th and 9th. The topic was Site Design-Drainage Workshop and was presented by Jeff Healy of Banning Engineering. This topic was the number one requested from the attendees of the 2001 seminars. Several chapters have also conducted seminars. As always it is requested the chapters inform the Education Committee of their plans, to help avoid scheduling conflicts and allow for topic diversification.

Also in this issue, the upcoming 2003 ISPLS Convention is outlined. The convention has continued to grow in attendees and in recent years has expanded to six choices of programs to choose from. Expect to see a lot of friends and some amazing new technology. The Northwest Chapter has worked hard in putting together a quality program.

Several committees have been busy completing their charges. The Publication Committee led by Dennis Grumpp is putting the final touches on the Law Manual (Manual No. 3). The HARN Committee is gearing up for next summers revisiting of the Indiana HARN. The Standards Committee is addressing several concerns that have been introduced to the ISPLS BOD. The Licensing Exam Committee has completed the fall review and, by the comments I've heard, did an outstanding job. Thanks to Ed Sweetland and all who participated. The education committee has been busy approving upcoming seminars and planning for 2003.

In the last issue I requested feedback on a variety of issues. I received two phone calls. Either the article wasn't read, everyone is happy, or you're all too busy making money to give feedback. I hope it is the latter two. I do encourage members to become involved in committees, local chapters, and to voice your concerns. The calls I received both concerned the monumenting of lots within subdivisions. The board will study how Rule 12 addresses this and see if a clear interpretation can be made. I have also had conversations with several members about the amount of money ISPLS has and it's long term plans. This too will be discussed and answers published.

Recently, Governor O'Bannon appointed Randy Miller to replace John Schneider to the State Board of Registration. Randy is a long time member of ISPLS, served on and chaired various committees through the years, and will bring a lot of energy, enthusiasm and ideas to the board. Congratulations Randy, and thanks to John for his many years of service.

Finally, I'd like to thank all my directors, group directors, committee chairs, committee members, Dianne and staff for making this year a positive experience. Under the leadership of next years' President, Greg Garrison, I am confident that the ISPLS will continue to provide its membership a professional identity, professional guidelines and direction, educational services, and to promote the interests of the profession.

NEW REGISTERED LAND SURVEYORS IN INDIANA

The Indiana State Board of Registration for Land Surveyors held the certificate presentation for new professional land surveyors on Friday, November 8, 2002. The ceremonies were held at 1:30 pm at the Government Center South Auditorium, Indianapolis. The following land surveyors were awarded certificates. Not all were present.

Name	City	LS#
Robert Aloï	Walkerton, IN	202000
Craig Bami	Wheaton, IL	20200045
Mark Barton	Boonville, IN	20200055
Aaron Blank	Wabash, IN	20200020
Jason Copperwaite	Corydon, IN	20200046
David Croft	Portage, IN	20200051
Phillip Gabhart	Washington, IN	20200018
Kevin Hennessy	Princeton, IN	20200026
Clayton Hogston	Indianapolis, IN	20200049
John Hood	Elwood, IN	20200017
Jonathan Isaacs	Medora, IN	20200015
Vincent Little	Terre Haute, IN	20200021
Terry Livingston	Paoli, IN	20200048
Kristopher Mayberry	Evansville, IN	20200023
Rick McAvene	Richmond, IN	20200050
Penny Narum	Anderson, IN	20200043
John Payne	Knoxville, TN	20200027
David Peck	Lafayette, IN	20200014
David Reynolds	Springfield, OH	20200019
Kevin Sayers	Demotte, IN	20200022
Randy Sekerez	Crown Point, IN	20200025
Mark Settlemyre	New Palestine, IN	20200044
Troy Smith	Fort Wayne, IN	20200047
Bruce Strack	Indianapolis, IN	20200057
Travis Summers	Loogootee, IN	20200052
James Swift	Crawfordsville, IN	20200016
Eric Williams	Franklin, IN	20200016
Donald Wimmer	Marion, IN	20200013
David York	Indianapolis, IN	20200053

ISPLS BOARD OF DIRECTORS MEETING HIGHLIGHTS

by Dianne Bennett, Executive Director

July 27, 2002

The ISPLS Board of Directors held a meeting on Saturday, July 27, 2002 at ISPLS headquarters. President Clark called the meeting to order at 9:30 a.m. The minutes and treasurer's report were reviewed and approved with corrections.

Staff Activity Report - A written report was submitted for board review. The report is stated under individual topics listed below.

Communication - Membership - The following applications were reviewed and approved. Professional Member - Jeffory Darling, Louis Bergman; Associate - Greg Loveless, Christopher Howell, Eric Bass, Craig Kuester; Affiliate - Stephen Vallier, Daryl Higgins, David Balster, Angela Gorton; Classification changes: Craig Kuester Christopher Howell and Eric Bass - Student to Associate; Stephen Vallier and Daryl Higgins, Prof. Member to Affiliate.

The final dues renewal will go out the first part of August.

Intersociety Relations - The goal is to have a list of about ten societies that would be to our benefit to attend and be involved with.

Foundation - Perry Cloyd led a discussion about the relationship between ISPLS and CICF and the current status of the ISPLS grants program last month. Discussion followed. Board of Directors (BOD) are to submit questions to Perry regarding CICF; he will then submit to CICF for answers for further BOD review.

Publications - The committee is going to investigate other states' publications to help us avoid repetition and improve our case law publication for next year's project.

Hoosier Surveyor - Plans are to have an education issue for the schools to present their various university programs.

Web Page - We need to look at a web advertising contract.

Public Information and Marketing - We would like to set up an ISPLS booth at the Ball State University job fair. We still have money budgeted for the purchase of a laptop and projector for presentations at these type of functions.

Professional Development - Education - The July 26th seminar on "Expert Witness & Record Research & Liability" by Knud Hermansen had 42 pre-registered.

John McNamara will be the speaker for the October 4th seminar in Warsaw. It will be a two part mandatory seminar on "Rule 12" and "Theory of Location-Back to Basics" which has already been approved by the Board of Registration (BOR) last year for the April 30, 2001 and May 1, 2001 seminar in South Bend.

ISPLS has renewed as a continuing education course provider.

Brad Cramer is in communication with Jeff Healy regarding a Subdivision Design seminar.

Honors & Awards - There was discussion about a 40 year membership acknowledgment.

Trig Star - The \$500 check to purchase the \$1000 bond has been made and sent on to Don Bengel to purchase the bond for the winner of the Indiana Trig Star.

Government Affairs - Board of Registration - A letter was received from Governor O'Bannon thanking us for recommendations for the appointment to the BOR.

At the July BOR meeting after much discussion, the board decided not to go forward with drafting rule changes to allow roll-over of excess continuing education hours into subsequent renewal

periods.

Proposed rule changes for: (a) Surveyor Location Reports (SLR) not showing found monuments on the drawing and, (b) extending the number of attempts for Land Surveyors-in-training exam from two (2) to three (3) chances will have a public hearing at the next board meeting on August 9th.

Internal Affairs - Professional Practice - Committee met June 7th. They are currently looking for a replacement for the North chairman.

Bylaws - Tony Gregory will contact other state associations regarding their by-laws and chapters.

Budget & Finance - The quarterly Wallington report was presented and reviewed.

Chapters - A draft map was passed out of the chapter boundaries. There was discussion on the Southeast Chapter.

Chapter reports - Northwest Chapter - They had just had a highway cleanup. Their next meeting is in September and the next cleanup is in September.

Central Indiana Chapter - The July 11th summer cookout meeting at G. Lengemann Company had about 20 members in attendance. An informative presentation was made by a code enforcement officer from the FCC regarding radio data link licensing issues and illegal GPS base station operations.

Old Business - Rick Miller talked with complaint analyst at the Attorney General regarding practice of land surveying by non-registrants.

There was discussion on the grant request from Randy Miller on the cornerstone perpetuation program. Perry had the county surveyors report on the subject. The initial phase of data compilation should be assigned to our county surveyors committee with support from Randy. Then ask Randy to develop a grant proposal to implement this on our website. We will ask John Stephens to respond on behalf of the county surveyors committee.

New Business - A 12 page report was passed out on the "NCEES Task Force for Model Law for Surveying" submitted by George E. Freeman, PE, PLS, Chairman. Review and discussion followed.

Rick Miller reported on the "Express Map Service" fax from a title insurance company to replace the ALTA/ACSM survey requirements. They propose to provide low altitude photography and provide analysis. This would indicate whether there may be survey related risk associated with the title insurance.

Tony Gregory reported on the Northeast Chapters' Golf Outing on Friday, August 2nd.

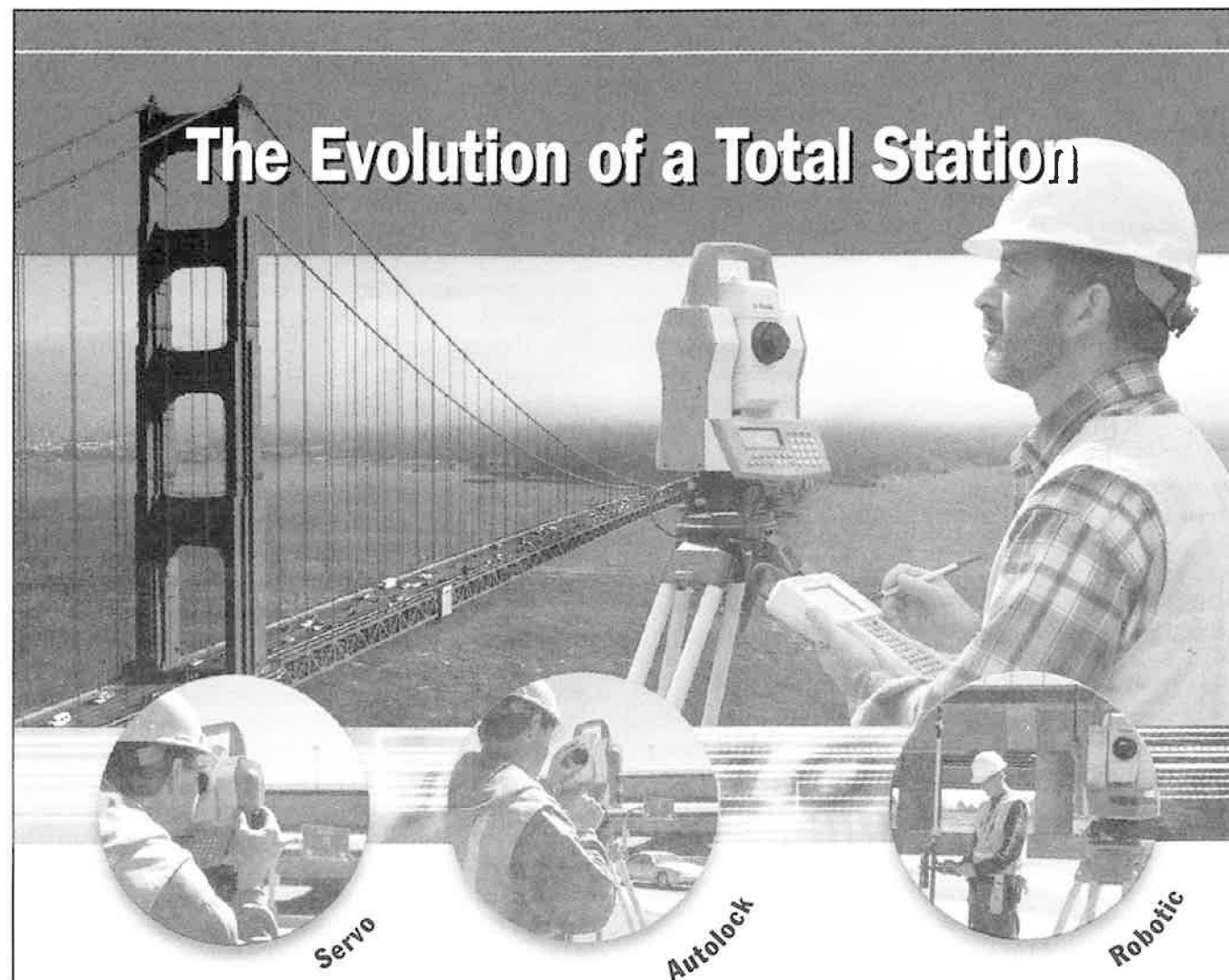
September 7, 2002

The ISPLS Board of Directors held a meeting on Saturday, September 7, 2002 at ISPLS headquarters. President Clark called the meeting to order at 9:32 a.m. The minutes and treasurers reports were reviewed and approved with revisions.

Staff Activity Report - a written report was submitted for board review. The report is stated under individual topic listed below.

Adjustment to the Agenda - Frank Ballintyn reviewed the Indiana Forest Classification Act regarding the survey requirement and then introduced Jack Nelson of the Indiana Division of Forestry

...continued Page 5



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and explained the Act and the Application For Classification. The Division of Forestry would like to make revisions to section 9 and section 26 of the Act. Following discussion it was decided to turn this matter over to the Standards Committee for review and comment and a recommendation back to the board of directors.

Communication - Membership - The following applications were reviewed and approved. Student - Eric Rider, Elijah Cook, Jeremy Mehringer, Brad Kleaving Christopher Cooper, Lawrence Jones, Joseph Govert, Robert Neuken, Mark Olson, Brandon Parker, Chad Schwent, Brian May, Mark Reisman, Jeremy Edmondson, Andrea Hildenbrand; Professional Member - Wilbur Peak, David Cox, Kenneth Soliday.

A situation was brought to the board's attention regarding a member not renewing his membership. Greg Garrison will follow up and report back to the board.

The board was provided a list of delinquent members that were deleted from the ISPLS roster.

Foundation - Perry received no questions from the BOD which were to be passed on to CICF. Perry asked CICF the following two questions: 1) If ISPLS contributed \$500 per year for a five year period can you tell us what the cost would be for CICF to administer the ISPLS account and provide information in a table form and 2) If ISPLS creates a 501c3 foundation can we have our pass through funds transferred to the foundation account. Discussion followed. It was agreed that the board would wait for the CICF response to the questions.

Publications - Manual 3 update: The law portion is 99% complete and the attorney is reviewing and rewriting Chapter 1 & Plans are to have a draft copy for review by the end of September.

Hoosier Surveyor - The next issue will be geared towards education at Purdue Lafayette, V.U., I.U.P.U.I. and P.U.Calumet.

Web Page - Chris Marbach presented recommendations for the web page.

Public Information & Marketing - There was discussion on the power point presentation. We will need an outline of each presentation.

Professional Development - Education - The income/expense report for the July 26th "Expert Witness & Record Research & Liability" (Income \$4662.00 minus expenses \$3156.83, Northwest Chapter will receive \$301.03 and ISPLS will receive \$1505.17) The June 28th Initial Point seminar was submitted. They had a loss of \$489.81.

The following ISPLS seminars need approval: September 28 - Tree ID, October 11 - Registration Act, October 25 - Rule 12-Case Study, November 8&9 - Site Design & Drainage, December 6 - Rule 12 - Case Study and January 15, 16, 17, 2003 ISPLS Convention.

Scholarship - Eric Rider was awarded the Peggy Archer Memorial scholarship for the 2002/2003 academic year.

The Purdue University's John McEntyre Scholarship was discussed regarding "need".

Trig-Star - Don Bengel will check on the "check" to the state winner.

Licensing Exam Review - The review for the LS/SIT will be October 11th and 12th at IUPUI. The cost is \$100 and \$75 respectively. The ISPLS manual 1, 2, and 6 will be included in the cost of the two seminars. A motion was made and passed to allow Ed Sweetland to reproduce the Manual 1, 2 and 6.

Steve Johnson of Purdue will have a "Three day Surveying School" at PU in the Spring of 2003.

Adjustment to the Agenda: Dave Ingram representing the Museum of Surveying was introduced. Dave passed out information regarding the Museum and the Indiana Compass. The cost of the compass to purchase it is \$4200. Pictures of the compass were passed around. Discussion followed. Membership in the Museum regarding the purchase of the Indiana Compass was also discussed. Membership applications were passed out to the BOD.

Government Affairs - Legislation - A list of names of candidates up for election will be given to the ISPLS PAC.

Board of Registration - The BOR met September 13th. The licensing agency is caught up on the LS renewals as of Friday, August 30th. There are 188 LS's that are delinquent.

HARN/GIS - The committee met September 6th. Harn Phase 3 will be coming to Indiana June/July of 2003. NGS will be observing only 20 monuments. The cost to observe additional points is \$3500. NGS will meet in Cleveland, Ohio on October 16th to discuss HARN. Committee position papers were discussed. CORS was discussed, as was the Indiana/Michigan State Line monumentation. A third position paper was discussed regarding Surveyors adopting NAD 83 State Plane coordinates.

NSPS Governor/Great Lakes Council - The next meeting will be during the Surveyors Rendezvous at Gettysburg, Pennsylvania on October 19th through 21st, 2002.

Standards - A letter was sent to the Board regarding Rule changes affecting 1-12-13 and 1-12-19. This is relative to ALTA survey standards.

Internal Affairs - Professional Practice - Existing Ethics committee investigation letter was discussed. A letter will be sent reporting the investigation findings.

Bylaws - The next meeting will be September 19th in Lafayette.

Nominations - Five names were submitted for President-elect. They were: Frank Ballintyn, Gordon Bell, Mark Isaacs, Bill Pettitt and John Stephens. A motion was made and passed to accept the recommendation of the Nominating Committee for the five names submitted.

Chapters - Ted Darnall reported on the organizational meeting held in Osgood for a Southeast Chapter. The counties involved are Decatur, Franklin, Ripley, Dearborn, Ohio and Switzerland.

A new chapter on the east side of the state involving Henry, Wayne, Rush, Fayette and Union counties was discussed. Due to the lack of ISPLS members within these counties an East Chapter is unlikely at this time.

Bill Clark is working on a West Central Indiana Chapter.

Chapter Reports - Central Indiana Chapter - They met last week for the annual Indians baseball outing. Their next meeting will be at Schneider Engineering. The golf outing will be September 19th.

Northwest Chapter - Their next meeting is September 12th and the US Highway 30 Cleanup is September 14th.

Old Business - The Attorney General office has filed a "Letter of Compliance" against a non-licensed person doing "fence line" surveys.

New Business - There was discussion regarding the Indiana Compass and the Illinois Lincoln Statue.

Also discussed was the fact that some surveyors may be using the wrong registration number.

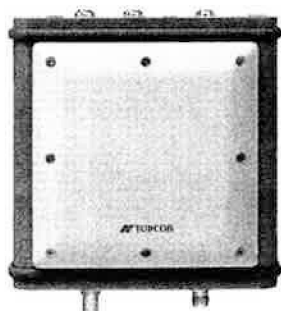


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CERTIFIED SURVEY TECHNICIAN (CST) PROGRAM

by Curt Sumner, ACSM Executive Director, ACSM Bulletin No. 191 May/June 2001

REAMBLE:

With so much emphasis being placed these days on the perpetuation and enhanced professional standing of surveying through the development of educational opportunities in our four-year university programs, it is sometimes easy to overlook a significant segment of the profession. That segment is the multitude of technicians who every day collect and process the data on which we, the professional surveyors, base our analyses and form our opinions.

As we pursue and encourage the concept of a four-year degree requirement for licensure, it is important that we also plan for the career advancement of those who, for whatever reasons, will not attain that status. We in the professional ranks must understand that the incentive and initiative necessary to keep our invaluable technicians in the business can only be recognized if a clear career path is defined.

A uniformly recognized method for documenting one's progress and achievements can be a major factor in this process. "CERTIFIED COMPETENT"

Many years ago I played with a team of softball players who traveled to various parts of the country to compete. One of our players, who found humor in any situation, commented once that another of our team mates was crazy and had a certificate from a psychiatrist to prove it. While that statement is in poor taste, the point implied (probably unwittingly) is that a certificate carries with it a level of authority.

Certification is used by many organizations to acknowledge, through testing or some other mechanism, that someone has met requirements it has set forth for a particular activity. Certification is not the same as licensure, which bestows upon one the right to provide a service (usually a professional service) to the public in return for acceptance of the responsibility and liability associated with that right. It does, however, provide credibility for the person holding the certification.

Likewise, certification is a tool that can be used by anyone who wishes to purchase something for which the value may be subjective. For instance, if one wishes to purchase a used car, a notification on the window that the car is "certified" implies to the potential buyer that some extra care has been taken to increase the car's value. In surveying, a certification statement on a plat, signed by the surveyor, indicates that the service provided in order to create the plat was conducted at a level of high professionalism and quality. Whether a service one needs or wishes to purchase relates to repair of the washing machine, the car, or the computer, we all feel more confident that the service provided and the work done will somehow be better if performed by a "certified" technician.

When holding a certification is recognized by some entity as being necessary in order for one to be considered competent to provide a service, those wishing to provide that service will place great value on the certification. Such is the case with some consulting contracts through which private firms provide services to government agencies, like the ACSM Hydrographic Surveyor Certification required to perform some Corps of Engineers funded work.

It is within the context of providing both a credential and an evaluation tool that the Certified Survey Technician (CST) program, run through NSPS and ACSM, was created. The program has been in existence for several years. It has been within the past few years,

though, that it seems to have begun to generate greater interest among employers, technician level employees, and those who procure surveying services. As a company owner, I would like to have the ability to better gauge an applicant's capabilities than is typically possible through what is written on their resume. Likewise, those seeking employment need a credential to show that they have achieved recognition for a certain level of competence. While a procurement requirement that a firm have CST's on staff may not become mandatory in contracting for surveying services, agencies could certainly begin to allow extra credit to those firms who do. These are among the factors that make the CST program a meaningful benefit to the surveying profession.

The CST program is overseen by a board of volunteers from within NSPS/ACSM. The board is responsible for assuring that the test questions are legitimate, and for reviewing any challenges to questions that have been posed by examinees. They are also responsible for setting the pass/fail cutoff score for each test. The board also develops new questions to be inserted into the existing question banks, currently about 2600 questions. Staff members at NSPS/ACSM headquarters provide the administrative support necessary for the applications, testing, and renewals processes to function properly.

Currently, the CST testing cycles are administered in conjunction with NICET, a national testing organization. NICET provides the routine test sites, the proctors, and grading of the tests. Sometimes there are not enough test seats available at the NICET test sites to accommodate those wishing to take a CST exam. When this occurs, or if testing is requested within the test cycle by those who cannot go to a NICET site, a test can be set up if a proctor and a site can be found. As interest has grown in the program, "special" tests as they are known, have become more prevalent. Future growth of the program may at some point require rethinking of the arrangement with NICET, if for no other reason than the volume of applications for tests. It seems appropriate that NSPS/ACSM should seek to develop arrangements with the various state surveying societies to identify proctors and test sites so that applications for testing can be accommodated regardless of whether there are available NICET seats.

Another aspect of CST is that it can serve as the basis for a career track for the technician level employees who may not have the opportunity to achieve the professional surveyor level because of existing or impending laws requiring a four-year degree. The CST program should be promoted as a benefit to members who can offer it to their employees at a reduced rate. Building a career track for technicians is critical to the future of the surveying profession because people need to have documentation that they have reached a particular level of competence. Without that documentation, the incentive to not only progress, but also just to stay in the profession may not exist.

With the help of many volunteers across the country, the CST Board, and the leadership within NSPS in particular, the program has made great strides. Recently, it was selected as the source for certification of Land Survey Technicians by the Arizona Department of Transportation. This is a program that deserves to be encouraged and utilized by the surveying community, and one that can serve as a model for future certification programs that may be considered by ACSM.

Vincennes University
Surveying Technology

History

In 1975, having taught two years at the University of Evansville in the School of Engineering, I accepted a position at Vincennes University in a Civil Engineering Technology Program. That program had a history of declining enrollment and the position required that within two years either the enrollment would be stabilized or it would be discontinued.

It became quite apparent that there was no real opportunity to save this program, as there were too many similar programs throughout the state. Additionally, jobs for graduates just were not readily available. Then President Isaac K. Beckes made it quite clear "Success of a program at Vincennes University is based on several factors. A transfer program should have the vast majority of its credits accepted into a B.S. degree program, that students would maintain a better than average GPA, and institutions would actively recruit graduates from that program for transfer. An occupational program's graduates should receive a better than average wage and benefit program, should be initially placed at a level of responsibility, and that available jobs far exceeded the graduates from that program because employers will specifically wanted a Vincennes University graduate. If you do those things, your enrollment will not be problematic. Program success, your success, will recruit students. As long as you embrace this expectation of success you will always have a position at Vincennes University."

Having spent several years working within the profession of surveying, having a genuine love for that work which provided the funds necessary for college, and having studied the needs for technically trained staff by surveyors throughout the state, it was decided to create a new curriculum. Civil Engineering Technology was dropped and a Surveying Curriculum was added. In 1977, the Commission for Higher Education for the State of Indiana approved this new curriculum. In that year, there were 12 second-year students and 14 new freshmen.

The program has never had fewer than the initial 14 freshmen, but more importantly, it maintained those expectations expressed by Dr. Beckes and it accomplished this by enlisting licensed surveyors throughout the state as an active advisory committee.

Current

The mission of the Surveying Technology Department at VU is to fulfill its students and graduates with "the passion to be successful in the profession of surveying, to be part of the team that gets the job done with the highest quality possible and with the most efficient methods available".

The philosophy of the program is to place students in a real life surveying environment. First year students spend approximately 60% of class time in an outdoor lab. They begin with throw chains and advance to total stations at the end of their first year. Second year students average twenty hours a week in outdoor labs, in

addition to their classroom hours. The majority of their lab hours are work projects for the university, city or county.

The typical student is one who has just completed high school, has little to no surveying experience; but likes technology and working outdoors. Typical class sizes are 14-16 per section and the attrition rate for first year students is around 25%. The majority of our students complete the program in two years with approximately 10% requiring an extra semester or two. Only a few students pursue a B.S. degree, usually attending IUPUI; however, we have had students receive degrees from Ferris State, Purdue, and Western Kentucky.

Along with traditional assessment tools, our first year students take the NSPS CST Exam Level 1 and the second year students take Level 2. Vincennes University students have continually scored above the national average and usually post the highest score. Our graduates who pursue licensing have also shown a high rate of success. In addition, we do a 5 year follow up survey to plot the advancements our graduates achieve. One of the best assessment tools as to our students abilities, are the businesses who continue to hire from Vincennes University.

Future

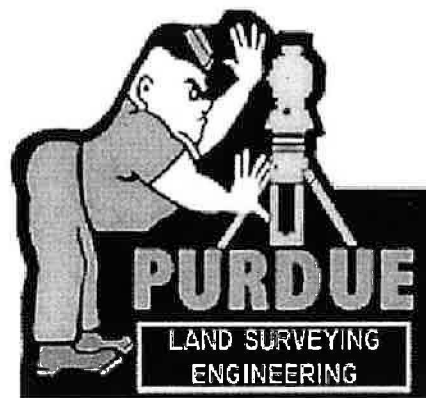
The Vincennes University Land Surveying Program is prepared to provide the most comprehensive instruction using the most modern surveying methods. The surveying profession is faced with keeping up pace with industry implementing new technologies in GPS and GIS. These systems have to be used, managed and updated by skilled technicians. Spatial information and data are being collected, analyzed, and processed by other disciplines outside the surveying profession. The emerging non-traditional disciplines can benefit from what the Surveying Program can offer to prospective employers that use this technology. The Vincennes University Land Surveying Program integrates training with modern conventional and non-conventional surveying instruments with a commitment on emphasizing the fundamental principles of surveying methodology. Industries embracing new technologies in spatial relations will be confident that those graduating from the Vincennes University program will be trained and skilled in data collection, construction staking and boundary surveying using the latest technology. The new facilities and equipment recently acquired by Vincennes University, indicate a dedicated level of commitment to the program. Vincennes University, realizing the needs of its constituency, will continue to advance its present and future commitment to the Land Surveying Program and the surveying profession.

History by Art Haase, Dean of Technology, Vincennes University
Current by Bill Clark, Associate Professor Surveying Technology, Vincennes University
Future by Luke Brazdys, Instructor Surveying Technology, Vincennes University

SURVEYING TECHNOLOGY 8510
A Two-Year Program Leading to the A.A.S. or A.S. Degree

Table with 4 main columns: Major Program Requirements, Credit Hours - A.A.S., A.S., and Recommended Sequence of Courses. It details course requirements for two-year programs leading to A.A.S. or A.S. degrees, including semesters I, II, III, and IV.

1 Recommended earth science elective for all surveying majors.



School of Civil Engineering Purdue University

Land Surveying and Geomatics Engineering

The land surveying and geomatics engineering programs at Purdue University include undergraduate and graduate degree programs and research in the broad topics of geomatics.

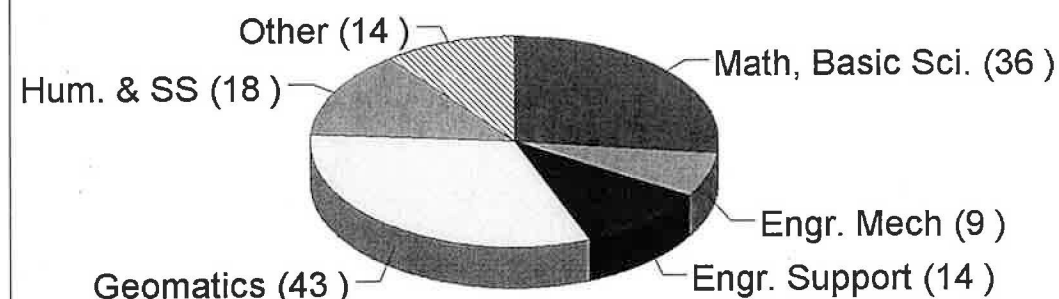
Undergraduate Program

Purdue University awards the Bachelor of Science in Land Surveying Engineering (BSLSE). The BSLSE is a four-year degree program offered in conventional day classes. Students in civil engineering and in construction engineering and management may also pursue a five-year dual degree program with land surveying engineering. At the present time (2001), the number of undergraduate students pursuing the BSLSE or the dual degree option is approximately 45. The total does not include first year students in the Freshman Engineering program.

The Bachelor of Science in Land Surveying Engineering program is accredited by the Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology (ABET).

The core of the Land Surveying Engineering (LSE) degree program is land surveying (boundary surveying) and land development engineering. The program also provides extensive work in engineering surveying and geodetic surveying. The program provides a foundation upon which graduates can build careers in photogrammetry, mapping, and geographic information systems (GIS). Complete competency in these areas is best obtained by graduate study in our program.

BS LSE Curriculum 133 Semester Credits



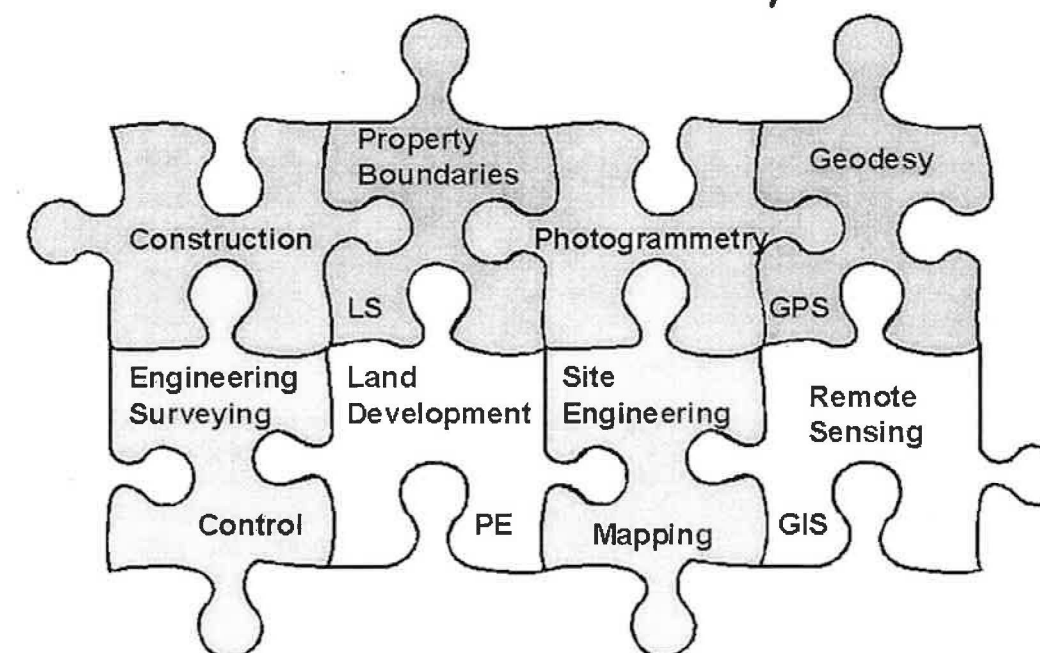
Required courses within the curriculum include two calculus-based physics courses (7 credits), two courses in general chemistry (8 credits), five math courses (18 credits), and three computer programming and computer tools courses (6 credits). One course in each of English composition, speech and communications is required. A fundamental course in statistics is taken in the Statistics Department. A course in engineering economy is taken in the School of Industrial Engineering. Courses in engineering mechanics, materials, hydraulics, and transportation are taken in the School of Civil Engineering to provide an engineering base and preparation for land development and site engineering practice.

The LSE courses include the requisite preparation in engineering surveying and measurement sciences, a five-course core sequence in boundary surveying, and related courses in geodesy, photogrammetry, and GIS. Three technical electives are selected in consultation with an advisor to meet the individual student's academic goals and interests. Two of the technical electives must be selected from a list of elective courses approved by the Geomatics Area faculty.

The curriculum provides a comprehensive design project experience, LS400, in the summer between the junior and senior years. The curriculum culminates with a capstone design course, LS409, in the last semester emphasizing land development. The last semester also includes a significant survey design experience in the CE511 GPS Surveying course.

The undergraduate program in Land Surveying Engineering at Purdue University is designed to meet the needs of the land surveying profession in Indiana; however, our students are in demand throughout the United States. The original Land Surveying program graduated the first student in 1973. Through August, 2002, 337 students have completed the degree

Put your career together at Purdue University



program. The original Land Surveying program was accredited in 1983, the second program to be accredited in the U.S. In 1989, the program was accredited as an engineering degree and renamed Land Surveying Engineering. Somewhat unique to Indiana is the inclusion of basic site engineering, including grading and drainage plans, in the practice of land surveying. Therefore, the LSE curriculum has a significant civil engineering component as well as a core land surveying component. Graduating seniors take the Fundamentals of Surveying exam in their last semester. Dual degree students take both the Fundamentals of Surveying and the Fundamentals of Engineering exams in their fifth year.

Graduate Program

Purdue University also awards the Masters (MS) and Doctor of Philosophy (PhD) degrees with emphasis on any of the components of geomatics engineering: surveying, geodesy, photogrammetry/digital image analysis, remote sensing, and geographic information systems (GIS). Two MS programs are available, a thesis and a non-thesis option. The non-thesis option requires 10 courses (30 credit hours), which can be completed by a full-time student in one calendar year. It usually takes 18 to 24 months for a student on an assistantship. The 10 courses are distributed over the sub-areas (geodesy, photogrammetry, data

adjustment, GIS) with more courses selected in the student's particular area of interest. The thesis option requires three fewer courses to enable the student to complete the MS thesis.

The PhD program requires 48 credit hours and a dissertation. In addition to geomatics courses, the student is advised to take courses in other science and engineering departments in support of his/her objectives. Courses in such areas as mathematics, statistics, computer science, electrical engineering (computer vision, pattern recognition, etc.), and aeronautical and astronautical engineering (orbit and flight dynamics, etc.) are recommended.

At the present time (2001), there are 10 sponsored research projects that cover a wide range of basic and applied research in all activities of geomatics. Some of the current project titles are:

- Rapid and Affordable Generation of Terrain and Detailed Urban Features
- Sensor Modeling and 3D Visualization
- Motion Imagery Modeling Study
- Modern Design Data Collection
- Geospatial Processing of Mars Orbital Camera Images
- Improving Efficiency of Traffic Data Collection Using GPS Devices

Graduate students may be supported by research assistantship positions on the current research projects or by a limited number of teaching assistantships in the School of Civil Engineering. In the past five years, 38 Masters degrees and 7 Doctorate degrees have been granted.

Faculty and Students

The Geomatics Area faculty is comprised of five members. An additional adjunct faculty member also contributes to the undergraduate professional practice and design course work in the program. The Geomatics Area faculty members are involved in undergraduate and graduate teaching, student advising, research, and professional service. Some of the activities of the faculty members are:

- Maintaining the Office of the Indiana State Geodetic Advisor
- Coordination of all NCEES exams at Purdue University
- Participating in NCEES surveying exam preparation
- Participating in ABET accreditation activities
- Advising ACSM-ISPLS Student Chapter
- Advising Lambda Sigma Honor Society for surveying students

Purdue BS, MS, and PhD graduates have successfully pursued geomatics based careers in government (State and Federal) as well as in the private sector.



The detailed curriculum and admission requirements for the undergraduate and graduate education opportunities in Geomatics at Purdue University can be found on our web site.

Web Site - www.ecn.purdue.edu/Geomatics/
E-mail - steven@purdue.edu

PURDUE UNIVERSITY CALUMET

Land surveying education through the Construction Technology (CNT) Department at Purdue University Calumet has evolved over the past 11 years to the point that a 4-year Surveying Technology Option is now available. The option, which was formerly introduced in the Spring 2000 semester, now contains 10 surveying courses totaling 31 credit hours, and has been approved by the Indiana State Board of Registration for Land Surveyors, and by the Land Surveyors Licensing Board of the Illinois Department of Professional Regulation.

Purdue University Calumet (PUC) is located in Hammond, Indiana, and is a commuter campus with a total enrollment of approximately 9000 students. The student body at PUC consists of many non-traditional students. At this time, there is no residency on campus, so most students take courses while working part-time or full-time jobs.

The curriculums offered by the CNT department include Associate of Science degrees in Architectural Engineering Technology and in Civil Engineering Technology, and a Bachelor of Science degree in Construction Technology. All curriculums are accredited by the Technology Accreditation Commission (TAC) of the Accreditation Board for Engineering and Technology (ABET). The Surveying Technology Option consists of the curriculum of the Associate of Science degree in Civil Engineering Technology for the first two years, and a modified curriculum of the Bachelor of Science degree in Construction Technology for the last two years (curriculum listed below).

Prior to 1991, the department regularly offered courses in Elementary Surveying (CET 104), Route Surveying (CET 208), Land Surveying and Subdivisions (CET 209), and Construction Surveying (CET 306). All of these courses were required in the existing curriculums. Due to an apparent need, the CNT department created a course in Surveying Law and offered it for the first time in the Fall 1991 semester. Because of the success of that course, other course topics were investigated. Representatives from the CNT department at PUC met with representatives from the CNT department at Indiana University - Purdue University at Indianapolis (IUPUI), and the two departments began to create new courses and offer them simultaneously. Over the next couple of years, new courses in Surveying Computations and Legal Descriptions were created and offered. Along with the Surveying Law course, these new courses were offered as electives with nonpermanent, experimental course numbers.

After offering each of the new courses a couple of times, it became apparent that the creation of more new courses was justified. So, in the Fall 1997 semester, the three courses were expanded into five courses. All five courses were formerly adopted and given permanent course numbers. They are Surveying Computations (CET 210), Land Survey Systems (CET 303), Legal Descriptions (CET 304), Astronomic and Geodetic Surveying (CET 322), and Surveying Law (CET 402). At this point, all five courses were considered electives, and were offered in a rotating order - one course each semester. No formal curriculum or option was yet published. It should be pointed out that the PUC and IUPUI curriculums, although still similar, began to somewhat differ from each other as each began to serve differing needs.

The goal at PUC has been to create an accredited four-year degree in Surveying Technology. However, it is first necessary to

draw enough students in order to demonstrate a demand for the new degree. By advertising the course offerings to land surveying firms in Northwest Indiana and Northeast Illinois, new students were drawn, but not enough to justify the new degree. Prompted by changing legislation relative to minimum educational requirements for acceptances to take the Land Surveyor in Training (LSIT) exam in both Indiana and Illinois, and by following the lead of the IUPUI Construction Technology department, the CNT department at PUC decided to establish the four-year option in Surveying Technology. As stated above, the option was formerly introduced in Spring of 2000. In June of 2000, the option was presented to the Indiana State Board of Registration for Land Surveyors, and was conditionally approved until January of 2003. The curriculum met the current minimum educational requirements in Indiana (12 credit hours of land surveying courses, 12 credit hours of mathematics courses, and 8 credit hours of science courses). The conditions of the approval were that the curriculum would have to be revised to (1) include a Property Surveying course, and (2) increase the total number of credit hours of lab science courses. These conditions were necessary in order for the curriculum to meet the new minimum educational requirements which go into effect in January of 2003 (27 credit hours of land surveying courses, 12 credit hours of mathematics courses, and 12 credit hours of science courses).

The option was presented to the Land Surveyors Licensing Board of the Illinois Department of Professional Regulation via an on campus visit in April of 2001, and the curriculum was approved by that board with no conditions. Illinois' minimum educational requirements for acceptance to take the LSIT exam consist of a four-year degree in land surveying or in a related science, with a minimum of 24 credit hours of land surveying courses.

A new course in Property Surveying was created and is being offered for the first time in the Fall 2002 semester. This course was added to the curriculum of the Surveying Technology Option, and the lab science requirements were increased to 12 credit hours. This revised curriculum was presented to the Indiana State Board of Registration for Land Surveyors at their September, 2002 meeting, and the curriculum was approved without conditions.

The four original courses are still offered regularly each year, as they are required in all of the CNT department's curriculums. The other six courses which have been developed since 1991 are offered in a rotating order - one course each semester - at this time. Course offerings will increase with increased enrollments. Additionally, new courses will be developed and added to the Surveying Technology Option as demand and resources warrant.

Currently, all full-time and part-time faculty who teach land surveying courses at PUC are licensed land surveyors. Professor Tony Gregory is licensed in Indiana and Illinois, and is the only full-time faculty member teaching land surveying courses. Guest lecturers include Rich Hudson, who is licensed in Indiana and Illinois, Ken Gembala, who is licensed in Indiana, Illinois, and Wisconsin, and Glen Boren, who is licensed in Indiana.

It is still the goal of the CNT department at PUC to develop an accredited four-year degree in Surveying Technology. As stated above, enrollments will need to increase in order to justify the new degree. However, the department is committed to continue providing land surveying education to students from the Northwest Indiana and Northeast Illinois areas.

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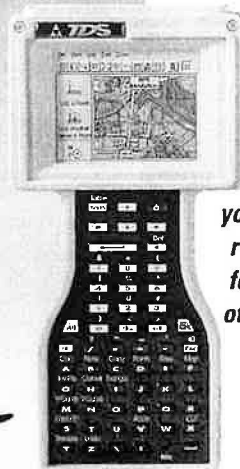


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CIVIL ENGINEERING TECHNOLOGY

Associate Degree Program (69 or 70 hours)

Freshman and Sophomore Years

1st Semester (18 or 19 hours)

- (3) ARET 117 - Construction Drafting
- (3) ARET 170 - Matls & Systems of Construction
- (3) CET 100 - Technical Computations
- (3) ENGL 104 - English Comp. I
- (3) MA 147 - Alg. & Trig. for Technology I
- (3 or 4) - General Education Elective

2nd Semester (16 hours)

- (3) CET 104 - Elementary Surveying
- (3) CET 160 - Statics
- (3) COM 115 - Fund. of Public Speaking
- (3) MA 148 - Alg. & Trig. for Technology II
- (4) PHYS 220 - General Physics I

3rd Semester (17 hours)

- (3) CET 208 - Route Surveying
- (3) CET 253 - Hydraulics & Drainage
- (3) CET 260 - Strength of Materials
- (4) MA 221 - Calculus for Technology I
- (4) PHYS 221 - General Physics II

4th Semester (18 hours)

- (2) ARET 276 - Specs. & Contract Doc.
- (4) CET 209 - Land Surv. & Subdivisions
- (3) CET 266 - Materials Testing
- (3) CET 280 - Structural Calculations
- (3) CNT 280 - Quantity Survey & Estimating
- (3) ENGL 220 - Technical Report Writing

CONSTRUCTION TECHNOLOGY (SURVEYING TECHNOLOGY OPTION)

Bachelor Degree Program (62 hours) - Junior and Senior Years

5th Semester (15 hours)

- (3) CET 306 - Construction Surveying
- (3) CET 331 - Properties & Behavior of Soil
- (3) CET 303 - Land Survey Systems
- (3) CNT 341 - Construction Operations
- (3) MA 222 - Calculus for Technology II

6th Semester (15 hours)

- (3) CET 210 - Surveying Computations
- (3) CNT 344 - Construction Inspection
- (3) CET 304 - Legal Descriptions
- (3) ECON 210 - Principles of Economics
- (3) IET 450 - Production Cost Analysis

7th Semester (17 hours)

- (3) CNT 450 - Construction Scheduling
- (1) CNT 489 - Senior Project Survey
- (3) CET 322 - Astronomic & Geodetic Surveying
- (3) CET 402 - Surveying Law
- (3) COM 315 - Commun. of Tech Information
- (4) _____ - Lab Science Elective

8th Semester (15 hours)

- (3) CNT 445 - Construction Management
- (3) CNT 490 - Senior Project
- (3) ENGL 420 - Business Writing
- (3) Humanities Elective***
- (3) CET 4xx - Property Surveying

For information regarding this curriculum, please contact the CNT Department office at (219) 989-2332, or Professor Tony Gregory (219) 989-2577.

IUPUI Surveying Classes Spring 2003

By Ed Sweetland, PLS

As many of you know I have a part time job as an associate faculty member at the School of Engineering & Technology at IUPUI. I started my part-time position in the fall of 1999 with CET 308 GPS for Land Surveyors. I remember my first night in the classroom like it was yesterday. I was standing in front of the classroom writing on the white board (chalk board) with a red marker and I was so nervous that my hands would not stop shaking, and by the end of the lecture my hands, arms, shirt and pants were all covered with red ink. After that night I settled down and my class and I both made it though the seminar unscathed.

After teaching the CET 308 that fall, I think I caught the (teaching) bug and I cannot seem to stay away. This spring I will begin my fifth year as an associate faculty member and I would like to invite you back to school to study land surveying.

For those of you who are not familiar with the IUPUI program, here is a quick overview. The School of Engineering & Technology at IUPUI offers surveying classes which qualify an individual for both licenser and continuing education credits. We offer survey classes in Geodesy, GPS, Writing Land Descriptions, Survey Law, Geographic Information Systems, Route Surveying, Construction Staking, Survey Computations and Basic Surveying. Several of the surveying classes are taught by practicing registered land surveyors which include Gary Kent, John Schneider and myself. I hope to see you in class.

Spring Surveying Class Schedule

CET 104 Fundamentals of Surveying
Tuesdays and Thursdays 2:30-5 p.m.

CET 304 Legal Descriptions for Surveyors
Mondays 5:45-8:35 p.m.

CET 308 GPS and Geodesy for Surveyors
Saturdays 8-11:50 a.m.

CET 402 Surveying Law
Wednesdays 5:45-8:35 p.m.

For more details call:
Erdogan Sener
Department of Construction Technology
317-274-8720

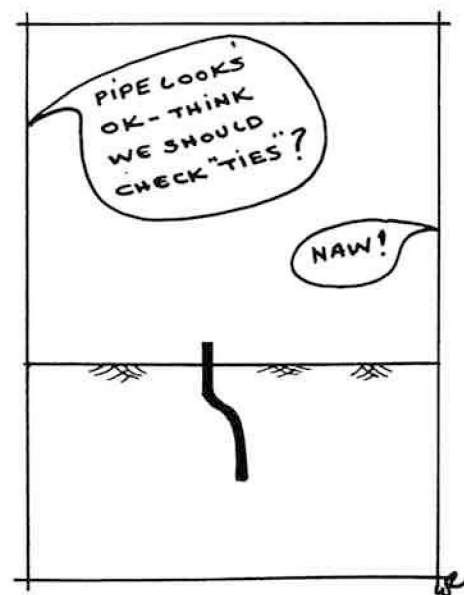
LS – SIT Review Seminar Recap

By Ed Sweetland, PLS

As many of you know this year ISPLS created the LS-SIT Review Committee whose main charge was to create review seminars for LS and SIT candidates. The 2002 committee consists of David Best, Gordon Richardson, John Updike and myself. Since we began meeting in March, we have met every two months to discuss and determine the topics to be presented in each review seminar. Our main goal is to establish quality review seminars that will prepare the LS-SIT candidate for their exam or exams. We also want to establish review seminars which are of the same caliber as the review seminars presented by both Michigan and Illinois surveying societies.

Our first seminar was held at Vincennes University on Friday (April 5) and Saturday (April 6). We had 8 participants for the SIT Review on Friday and 15 participants for the LS Review on Saturday. Each seminar lasted 8 hours and covered topics such as: Indiana Law, Boundary Surveying, Rule 12, State Plane Coordinates, Survey Computations, Tiffins Instructions, Unwritten Rights, Astronomic Observations, Early Indiana Trails and Surveys, and ALTA Surveys. Our second seminar was held at Indiana University and Purdue University at Indianapolis (IUPUI) on Friday (September 11) and Saturday (September 12). We had 14 participants for the SIT Review on Friday and 21 participants for the LS Review on Saturday. I believe all the seminars were a great success and have improved the exams' pass/fail ratios.

In closing I would like to thank my committee for doing such a great job and hope they will continue their involvement next year. I would also like to invite new LS/SIT test candidates to attend next year's review seminars scheduled for the Spring of 2003 and the Fall of 2003. Each year the committee plans to present the seminars in different regions of the state. Next year we hope to present the seminars in both Hammond and Fort Wayne.



"Reprinted from the Wisconsin Professional Surveyor".

THE INDIANA HARN PHASE III

By

Boudewijn H.W. van Gelder, Indiana State Geodetic Advisor

The National Geodetic Survey is currently remeasuring the state HARN's. Our state is scheduled to be remeasured in the summer of 2003. The GIS/LIS/HARN committee of ISPLS decided to follow the same approach as in the late nineties, following the success its membership played in mobilizing the (counties of the) State of Indiana. For that reason, I included the letter that was sent to 276 County Commissioners, and 89 County Surveyors. The letter says it all:

To the Attention of the County Commissioner/County Surveyor
County xxx
State of Indiana

West Lafayette, September 24, 2002

Re: Participation of your County in the
Indiana High Accuracy Reference Network (HARN)

In the years 1997/1998 your county participated in the establishment of the Indiana High Accuracy Reference Network (HARN). The Indiana HARN is a network of reference points, or reference markers in the ground, the locations of which have been accurately determined by a state-wide survey using satellites belonging to the Global Positioning System (GPS).

Each state in the U.S. has a HARN in place. The Federal Government through the National Geodetic Survey (NGS) is only responsible for a portion of the network, the so-called Federal Base Network (FBN). The rest of the network, being proposed by various state agencies, county governments, surveyors, private persons, etc., is the so-called Cooperative Base Network (CBN). The FBN portion and the CBN portion constitute together the state HARN. The current Indiana HARN consists of about 150 points. About 20 points belong to the FBN, the remaining 130 markers make up the Indiana CBN.

History of the Indiana HARN

During the period before 1997, the Indiana counties expressed interest in the establishment of one, two, three HARN points in their area. However, some counties established four, five, or as many as six HARN points. The Office of the Indiana State Geodetic Advisor (OISGA) inventoried the wishes of the counties, helped by local surveyors of the Indiana Society of Professional Land Surveyors (ISPLS). OISGA relayed the proposed network to the headquarters of the NGS in Silver Spring, MD. In the summers of 1997 and 1998, surveyors of the Indiana Department of Transportation (INDOT), Indiana Department of Natural Resources (IDNR), and the Indiana Department of Environmental Management (IDEM), worked together with surveyors from engineering contractors, to measure the Indiana HARN in collaboration with NGS.

House Bill 1036, signed into law (P.L. 273) by Governor E. Bayh on May 8, 1995, not only created the Office of the Indiana State Geodetic Advisor at Purdue University, but more importantly, allows County Surveyors to legally use monies, collected under the Section Corner Perpetuation Fund, for the creation of CBN/HARN points in their county.

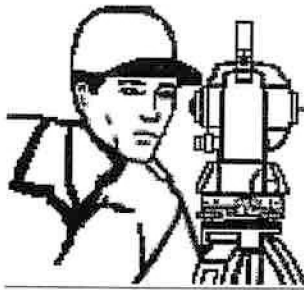
Remeasurement or expansion of the Indiana HARN

With GPS technologies evolving, measurement techniques improving, and the wide disparity of quality between state HARN systems, NGS is currently working, out of necessity, on the remeasurement of all HARN's throughout the US.

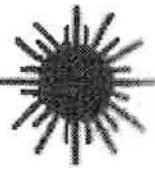
Remeasurement of the Indiana HARN is scheduled for 2003. Therefore another opportunity exists for counties to either expand or remeasure their network of reference markers. The existing Indiana HARN network of 150 points is spread out over 92 counties indicating that the average number of HARN points per county is rather low (about 1.5).

In the years after 1998, county surveyors, private surveyors and county GIS coordinators have all experienced great benefits of having local access to a network of precise reference markers to support all types of geospatial activities. These reference markers form, as it were, the geometric backbone of that county.

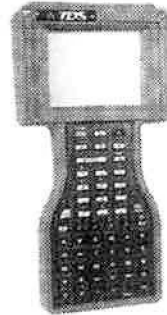
In recent years, OISGA has been informally approached by representatives of various counties, by local surveyors and by GIS coordinators to expand the sparse local CBN/HARN network. Most often the expansion of a local CBN network would be cost prohibitive for one county. During the remeasurement of the Indiana HARN, NGS survey crews will visit our state and occupy only those HARN points the Federal Government is responsible for: the FBN network of 20 stations. If, at the same time, existing and/or newly proposed CBN points are occupied by other GPS survey crews, the price of these CBN points become very affordable for the counties. The latter survey crews could be drawn from Indiana state agencies, Indiana county surveyors offices, or private surveying and engineering firms.



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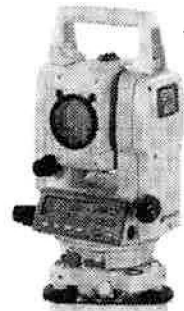
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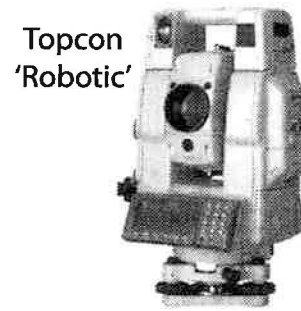
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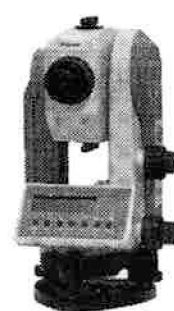
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PROGRAM SCHEDULE 2003 ISPLS CONVENTION

Marriott Downtown Hotel, Indianapolis (January 15-17, 2003)

Wednesday, January 15, 2003

R/W ENGINEERING - by Ronald Raney, PLS
(3 CEH - Elective Credit) * Approval Pending *

The course "R/W Engineering" will equip the attendee with knowledge of how to prepare R/W Parcel Plats, R/W Parcel Descriptions and R/W Plans to successfully transfer and clear encumbrances of real property to political entities, for the purpose of clearing R/W for new construction and comply with Title 865 IAC 1-12.

INDIANA WETLANDS – STATUS OF SCIENCE & POLICY

by Eric P. Ellingson, C.P.G., P.W.S. (3 CEH - Elective Credit)

The goal of the session is to present an overview of the science and policy surrounding wetlands. The first segment will focus on the science of wetland delineation and will address the three primary criteria used in making wetland determinations (hydric soils, wetland hydrology and hydrophytic vegetation). The session will also review the current trends, policy and politics of wetland regulation from a federal and state perspective. This segment will attempt to answer the following questions: What is a regulated wetland? Who is regulating that wetland? And, What activities require a state or federal permit.

Thursday, January 16, 2003

TO ACCEPT OR NOT TO ACCEPT.....THAT IS THE QUESTION
by Dennis Moulund and Wendy Lathrop (6 CEH - Elective Credit)

The fundamental reason surveyors are in a regulated profession is because of one specific decision we make each time we do a boundary survey.....what to do with the lack or over-abundance of corner evidence. A fast-moving full day course on the most difficult question in the profession.

STATE PLANE COORDINATES by Dr. James P. Reilly
(6 CEH - Elective Credit)

This session will cover fundamental topics in State Plane Coordinates, and will include history and development of SPCS, map projections, conversions between latitude/longitude and state planed coordinates, traversing, and UTM coordinates.

INDIANA SURVEY LAW - THEORY OF LOCATION IN INDIANA CASE LAW,
by Gary R. Kent, PLS (6 CEH - Mandatory Credit)

After completing this session, attendees will be versed on the basics of interpreting deeds and performing surveys based on those interpretations as outlined in Indiana Case Law. Attendees will be introduced to statute law and Indiana Common Law rules that outline the principles of boundary location and will learn how to apply those rules in preparing a defensible survey.

RULE 12 - THE NEXT STEP, by Ross O. Holloway, PLS
(6 CEH - Mandatory Credit)

The objective of this seminar is to provide an overview of applications of the current Indiana Administrative Code establishing minimum standards. The seminar will attempt to accomplish the following items:

- Define the purpose of a professional license
- Brief update of Rule 10 - Rules of Professional Conduct
- Overview of current Rule 12 with emphasis on Retracement Surveys, Original Surveys, and Surveyor Location Reports
- Review concepts of Surveyor's Reports relative to minimum standards requirements
- Review theory of location and its application within surveys and Surveyor's Reports

SAFETY ON THE RAILROAD, by Michael Marlow, PLS
(2 CEH - Elective Credit)

This program will deal with safety while working on railroad property.

SURVEYING THE RAILROAD, by Michael Marlow, PLS
(4 CEH - Elective Credit)

This program will deal with surveying railroad property and facilities.

SOILS AND SEPTICS (PART 1), by Brad Lee and Thomas Ziegler
(2 CEH - Elective Credit) * Approval Pending *

The objective of this session is to describe the role of soils in septic system siting, performance, and planning.

SOILS AND SEPTICS (PART 2),
by Allan Dunn and Chris Bourke
(2 CEH - Elective Credit) * Approval Pending *

The objective of this session is to discuss current and pending changes in statutes and rules relative to septic system siting, performance and planning.

MARKETING YOUR SURVEYING SERVICES TO ARCHITECTURAL AND ENGINEERING FIRMS,
by Michael Fink, P.E., P.L.S.
(2 CEH - Elective Credit)

This session presents guidance to the surveying services provider wishing to attract and retain clients who are architectural firms or combination architectural/engineering firms.

Friday, January 17, 2003

FORMING A SOLID FOUNDATION: THINKING BEYOND TECHNOLOGY
by Dennis Moulund (3 CEH - Elective Credit)

This half-day session examines problems that have evolved from a new generation of surveyors that rely heavily on technology, coordinates, and "cookbook" solutions. Simple conflicts in both boundary and construction surveys can create difficulties for the surveyor who lacks foundational knowledge of the tasks at hand. This is a really challenging and dynamic group discussion.

CHARM SCHOOL FOR SURVEYORS, by Dennis Moulund
(3 CEH - Elective Credit)

A very humorous guided tour through the essential items of being a professional surveyor. This course is not the "cure-all" for your problems; it's just a fun look at the things we all can do to improve ourselves and our profession.

FLOODPLAIN DEVELOPMENT - TECHNICAL GUIDANCE
by Wendy Lathrop (3 CEH - Elective Credit)

FEMA provides technical assistance and publishes technical bulletins to assist those who develop floodplains. Surveyors should understand the construction guidelines for National Flood Insurance Program compliance, as this helps us serve our clients while assuring we properly complete Elevation Certificates. A practical resource guide will be included in the handout.

DISPUTES BETWEEN LANDOWNERS by Wendy Lathrop
(3 CEH - Elective Credit)

A half-day session on the ins and outs of boundary disputes between adjoiningers and the role the professional surveyor should play in those disputes. Surveyors often find there is more than one opinion as to the location of boundary lines between adjoiningers.

A CASE STUDY IN THEORY OF LOCATION AND BOUNDARY RESOLUTION WITH RULE 12, by Gary R. Kent, PLS
(6 CEH - Mandatory Credit)

Attendees will be introduced to statute law and administrative code rules that control the practice of surveying. Together the group will develop an outline of those elements that apply to the case study. The group will analyze the record and field information provided for the case study, and develop defensible theories of location applicable to the resolution of specific parts of the boundary in the case study.

PRACTICAL SURVEYING WITH GPS, by Dr. James P. Reilly
(6 CEH - Elective Credit)

This session will cover fundamental topics in GPS, and includes GPS system, signal structure, satellite information, various types of surveying with GPS, geodetic coordinates, and other pertinent topics.

STORMWATER REGULATORY PERSPECTIVE: IMPACTS OF THE NPDES STORMWATER PHASE II REGULATIONS ON CONSTRUCTION SITES
by Lori Gates, Indiana Dept. of Environmental Management
(3 CEH - Elective Credit)

Significant progress has been made in controlling water pollution since the 1972 amendments to the Clean Water Act (CWA) authorized the National Pollutant Discharge Elimination System (NPDES) program. However, recent studies on water quality show that pollution from diffuse sources such as runoff from agriculture, urban areas, and construction sites is still causing water quality impairments. To address this problem, the State of Indiana must implement the federally mandated Phase II Stormwater program. This course will discuss the specific requirements and implementation of this new program. Attendees will gain insight into agency perspective and expectations for new regulations that will become effective in 2003 and will affect all construction sites that disturb one acre or more of land.

SOIL EROSION CONTROL PLAN DEVELOPMENT
by Douglas Wolf and Randy Braun, Indiana Department of Natural Resources
(3 CEH - Elective Credit)

Plan Development Essentials for soil and water resource concerns to client expectations & regulation compliance (rule 13 & rule 5). Soil resource limitations/characteristics considerations in plan development. A heavy emphasis on BMP's for effective erosion and sediment control.

ROADWAY SAFETY FOR SURVEYORS, by Ronald E. Koons
(2 CEH - Elective Credit) * Approval Pending *

Those attending will obtain an understanding of the proper procedures to protect their employees on or around a roadway.

WOODS, FIELD, AND WATER SAFETY FOR SURVEYORS,
by Ronald E. Koons
(2 CEH - Elective Credit) * Approval Pending *

Those attending will obtain an understanding of the safety equipment and procedures that would be required to protect their employees in the woods, fields, or around water.

SAFETY PROGRAMS AND RISK MANAGEMENT ISSUES FOR SURVEYORS, by Ronald E. Koons
(2 CEH - Elective Credit) * Approval Pending *

Those attending will obtain an understanding of the written safety materials that are required and how Risk management can positively affect their profitability..

Program packet will be mailed separately.

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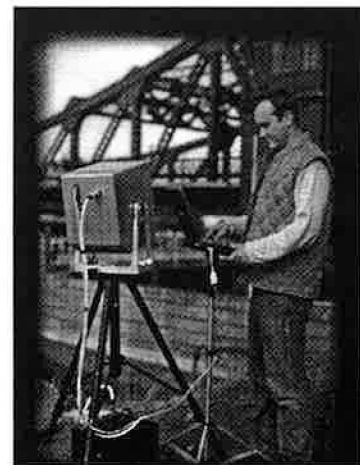
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MANDATORY CONTINUING EDUCATION - A REVIEW AFTER THE FIRST CYCLE

by Anthony Gregory, PLS, Hobart, Indiana

By the time all of you are reading this article, registered land surveyors in Indiana will have completed their first cycle in the mandatory continuing education program. Surveyors who satisfied the requirements of the program will have obtained at least twenty one (21) Continuing Education Hours (CEH). You will have completed and submitted your license renewal form, and you should have received your updated license. As often happens with new programs, snags in the system delayed the license renewal process, but it appears that the process has been completed, and licenses have been renewed for two more years.

Now that we have all been through the system once, it would do us well to look ahead to the next renewal cycle, which started on August 1, 2002. During this period, a registered land surveyor in Indiana will have to complete a minimum of twenty four (24) CEH in order to qualify for license renewal. A minimum of six (6) of the CEH will be required to be of mandatory topics which, per the rule, include Rules of Professional Conduct, Competent Practice of Land Surveying, and Indiana Land Surveyor's Registration Act. These hours will have to be completed by July 31, 2004. At this point, carry over of excess hours from one renewal period to the next is not allowed.

We need to be reminded that it is the responsibility of the registered land surveyor to maintain his or her own records relative to completed credits in the event of an audit by the board of registration. The continuing education rule states that the board "may conduct audits of registered land surveyors and providers for continuing education compliance". It has been reported that approximately 14% of registered land surveyors were audited as a result of this past license renewal. Also, credit can be obtained by taking courses from unapproved providers. However, the rule states that it is "the obligation of the registered land surveyor to submit course material from unapproved providers either not more than three (3) months after taking the course or three (3) months before the end of the renewal cycle, whichever comes first". The Board of Registration on August 16, 2002 adopted a change in the rule to increase the time to submit materials from three (3) months to six (6) months, and this change is awaiting approval by the Governor. The material to be submitted includes the course outline or description, a certified statement signed by the registered land surveyor stating that the entire course was completed, all information required in 865 IAC 1-14-13, and the name and professional biography of the instructor.

ISPLS is an approved provider, and will continue to offer continuing education seminars to benefit land surveyors in Indiana. As in the past, the society plans to sponsor a full-day seminar at least each spring, summer and fall. These seminars might be for elective credit or mandatory credit, and are held at various

locations throughout the state. Additionally, the society sponsors three 6-hour seminars for mandatory credit each spring and fall - one each in separate locations in the north, central and south parts of the state. Also, the annual convention each January will provide for numerous opportunities for credit to be completed. The educational program for the next convention is listed elsewhere in this issue. Information relative to upcoming seminars is posted on the society's web page at www.ISPLS.ORG

COMPLETED CAREER

**Philip Thornburg, PLS, 85
ISPLS Life Member**

Philip Thornburg, age 85, a resident of Friends Fellowship Community for the past two years, died Friday, October 18, 2002, in Reid Hospital.

A native and lifelong resident of Wayne County, he was born on July 9, 1917. He was a graduate of Centerville High School and served with the U.S. Marine Corps during World War II. He was a member of Richmond Noon Optimist Club; American Legion; Veterans of Foreign Wars; Marine Corps League; Indiana Society of Professional Land Surveyors; and the American Congress on Surveying and Mapping.

On November 28, 1946, he married Mildred Beeson who survives. He is also survived by two children, Fred Thornburg, Friendswood, Texas Marina Tackitt, Washington, D.C.; three grandchildren, two stepgrandsons, one great grandson, and three sisters. He was preceded in death by daughter, Nancy Thornburg, and a brother.

He started working for the Wayne County Surveyor, George Gault, in the summer of 1946 and continued surveying until he retired due to poor health in 1984. He was a registered land surveyor (inactive status) and served as Wayne County Surveyor from 1960 to 1972. He enjoyed surveying and was very precise, accurate, and honest in his work. Many of his men, who had worked with him and for him, paid high respect and tributes to him at the memorial service held in Hagerstown. Burial was in the Nettle Creek Friends Cemetery near Hagerstown, where a military graveside rites was conducted. Memorial contributions may be made to the Salvation Army.

Your editor remembers him well as a faithful attendee at early surveying conferences held at Purdue. May God be with you, Phil!



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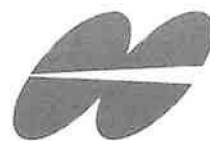
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Safety Training

by Ronald E. Koons, RoSaKo Enterprises
Safety Consultants, Middletown, Indiana

In my last article I discussed protecting your assets, and primarily your most important assets, your employees. To become a Registered Land Surveyor you must have various amounts of training (depending on the state) along with practical experience. Ironically, Land Surveyors, along with many other professions are not required to have any safety training in any program or state that I can verify. Not to pick on just the licensed professions, you can get a business or other degree from most institutions of higher learning without having safety training. To own, manage, or supervise a business in the United States a person must be aware of OSHA and it's implications on the business. So how did we end up with such a disparity in our education? Typical of many government regulations, Congress came up with the concept of OSHA without really thinking about how the entire training process should work. Sure, they also included funds for training in the act, but this only meets minimal needs throughout the country. I have spoken to many business owners and managers, some who have been in their position for many years. It would not be uncommon for them to have never attended a safety training session in 5, 10, 20, 30 or even more years of business experience.

Attending one safety training session for 90 minutes won't even come close to meeting your entire needs, but anything is a start. As time goes on you can add to your classes until you have eventually covered all of the required topics...and then you can start all over by refreshing your knowledge. Since everyone reading this probably has to keep up with required ceu's, why not include safety in some of your optional classes. In January of this year we presented three prime safety topics at the ISPLS convention, and we will be coming back in 2003. We will be covering two of the same topics, Roadway Safety for Surveyors, and Woods, Field and Water Safety for Surveyors. We have added materials in each of these and will also be discussing the new OSHA Regulations on Roadway Safety that will take effect in December of 2002. We will be adding one brand new topic, Safety Programs and Risk Management Issues for Surveyors. In this session we will discuss what type of a safety program you need and the various ways to accomplish this task. We will also discuss some Worker's Compensation issues and exactly how they can effect your bottom line.

Take this opportunity to add to your safety knowledge, gain some ceu's, and most importantly help add to your company's bottom line. Three for one...can't beat that!

TRIG-STAR 2002-2003

by E. Donald Bengel, PE-PLS, Valparaiso, Indiana
NSPS Governor

I.S.P.L.S. increased the success of the Trig-Star program greatly over the 2001-2002 effort. If we can get all the Chapters throughout the state to participate in this season's contest, it will result in a tremendous public relations campaign. As a result of this program many students get an exposure to the surveying profession. Due to the generosity of our members, several of the Trig-Star participants received cash prizes for their efforts.

The goal of the Trig-Star program is to recognize and stimulate the best students of mathematics from among school districts across the United States utilizing a competition with scholarship awards. The Trig-Star program:

1. Promotes excellence in the mastery of mathematics in high school,
2. Honors high school students who have demonstrated their superior skill among classmates at the local, state and national levels,
3. Acquaints high school students with the use and practical applications of mathematics in the surveying profession, and
4. Builds an awareness of surveying as a profession among mathematically skilled high school students, career guidance counselors, and high school math teachers.

Dates to know for Trig-Star:

State winners to NSPS by May 17, 2003.

National Contest results to NSPS by July 1, 2003

National Awards: First place - \$1,000 scholarship
Second Place - \$500 Scholarship
Third place - \$250.00 Scholarship
The student's trigonometry teacher will receive a Teacher Excellence Award of the same amount as the student.

These national awards are in addition to any state or local awards.

Our state Society has a Statewide License for Trig-Star. If you or your Chapter are interested in sponsoring a Trig-Star Contest at a high school, please contact Dianne at Society Headquarters at 317-687-8859 or E-mail at: ISPLS@aol.com for a Contest Packet.

Please give serious consideration to being part of the Trig-Star program.

SUMMARY OF SURVEYORS HISTORICAL SOCIETY RENDEZVOUS 2001, TEXARKANA

by Roger Woodfill, PLS, Lawrenceburg, Indiana

According to Dan Hampton of Mt. Pleasant, Texas (and he ought to know being the local coordinator for the Surveyors Historical Society's Rendezvous in Texarkana, October 4-6, 2001), "The northern portion of the east boundary line of the Republic of Texas where it adjoins the United States of America (i.e. Arkansas and Louisiana) has long been a source of confusion and consternation. It began with the push and shove between Spain and France as those countries struggled to claim parts of North America, and the boundary was still not clearly defined when "west of the line" became Mexico and "east of the line" became the United States of America (Louisiana Purchase 1803). The Adam-Onis Treaty (1819) established the line as a meridian line between the west side of the Sabine River (where it crosses the 32 degree latitude) on the north to the south bank of the Red River. But it was only after the Republic of Texas was formed in 1836 and the Arkansas Territory was established did the adjoiners agree to monument this line.

Attendees of the Rendezvous learned that the line was about 107 miles in length and that it crossed several swamps or bayous, but mostly the terrain was heavily wooded uplands. The opening speaker for the seminar was Archie P. McDonald, a history professor at Stephen F. Austin State University for 35 years and a past president of the Texas State Historical Association. He has authored more than twenty books on historical topics: and he made an excellent presentation blending European history, politics, geography, geology, and folk stories holding the participants attention who eagerly waited for the next fact or story. I enjoyed his version of history and sat next to McDonald at the dinner tables or on the buses whenever possible for more "Texas History". The survey line was run south to north during the months of April, May and June 1841. The surveyors did not work May 14th remembering the death of President William Henry Harrison. The final "report of survey" was delivered by succeeding President John Tyler to the U.S. Senate, March 17, 1842. It had been prepared by Daniel Webster as the Secretary of State.

The report was thorough, and it contains insights on the 1840's land surveying profession with comments such as "the salary of the surveyor shall be \$2000 per annum and that contingent expenses, wages of assistant surveyors, chainbearers and labors, and the incidental and necessary expenses of exploring parties; the purchase of instruments, stationery, and maps, of tents and camp equipage, and the purchase or hire of horses or wagons for transportation of the same" was set at \$10,000. Another letter in the report mentions the purchase of a "revised" John Melish 1818 map that was being published in Philadelphia. (Other than this Melish map being one of the earliest maps printed in North America, I personally found specification of this map interesting. Indiana surveyors know the earlier (1816) Melish map places Lake Michigan near South Bend in the center of our Michigan border; but the "revised" version correctly shows it at the northwest corner of our state making possible that lake ports of Gary, Indiana and

Chicago, Illinois.) Ports are important. According to some historical correspondence the beginning of our survey of the east Texas line was delayed because of a misunderstanding of who had wharf rights on the Sabine near the starting point. Actually, what the problem might have been (from a surveying prospective) was that the 32nd parallel intersected the Sabine River in a wide spot called the Sabine Pass or Sabine Lake. Various problems, mostly political but some logistical, and the weather delayed serious field work from August 1839 through March 1841. I am not clear about the adjustment made to the astronomical observations that were made at the beginning point, but April 22, 1841 a stone monument was set on some dry land "2 miles and 19,985 feet" north of 32 degrees latitude using a transit made by E. Draper of Philadelphia based on an 8" diameter circle and 15" graduations, and the survey began in earnest. From there the surveyors traveled north building mounds for monuments approximately every mile. If you are working near that line, be sure to remember that the mile markers differ from the mound numbers mostly because of this beginning shift, and neither corresponds with section corners.

Lieutenant-Colonel James Kearney of the Topographical Engineers appears to be the driving "surveying" force, although A.B. Gray was the official surveyor for Texas and J.R. Conway signs as the United States Surveyor. The survey party (subsequently estimated at about fifty) made great progress in my opinion April 24 through May 13th constructing Mound #1 through 35 and covering approximately two miles each day. "Astronomical observations were taken past midnight daily." As mentioned previously May 14th was the only "free day" taken during the entire survey when the survey party paused to remember President Harrison. By May 21st they had created eleven more mounds on line and reached the south shore of Ferry Lake. Kearney and his troop triangulated across the lake without much trouble, but they found it difficult going in the adjoining lowlands. Their work in this area was described as (aquatic labors) "wading and cutting, officers led the workers, — rafts unusable — deep swamp, almost impenetrable" for the next four days. Things improved in June with "flat country and high rolling hills". They found good water and an Indian trail until mound 70. Then conditions deteriorated again for the next eleven miles as they entered lowlands again with flooded areas and dense undergrowth. Actually on June 11th, mostly because of sickness, the men refused to work. The short lived "discontentment" appeared when they were proceeding at the rate of one mile per day. Then at mound #90 the ground is described as "high and rolling", and the pace picked up — building the final sixteen mounds in six days.

Just what did these piles of dirt made in 1841 contain to bring surveyors from Montana, Wisconsin, Virginia, California, Pennsylvania, Georgia, Michigan and ten other states....62 in all to Texarkana in 2001? According to the field notes:

"The mounds are embankments of earth five feet high, with

a base of fifteen feet in diameter, having a border of eighteen inches. In the center of each mound is planted a post of the most durable wood to be found, eight feet in length, the portion of it above the apex of the mound (being conical shaped) squared to eight inches. Upon the east side is carved "U.S." on the west side "T". The south side is **numbered** to indicate the miles distant from the intersection of the 32 degree of the north latitude with the western bank of the Sabine river. At the foot of each, which is planted eighteen inches below the surface of the ground, is buried a glass bottle closed with a ground stopper, and sealed, containing, written on parchment, the following inscription: To mark the meridian boundary between the United States of America and the republic of Texas this mound is erected, on this the ____ day, 1841, ____ miles distant north of the 32nd degree of north latitude."

The "search-party" bus that I boarded did not find any mounds; but I understand that the other bus of attendees found three likely sites. Subsequently, those sites have been excavated by proper authorities. No bottles or remnants of the "original" surveyors were found; but of course, the boundary line still remains. The sites we visited were all on the modern day Arkansas/Texas state line. In 1941 the Louisiana Department of Highways conducted a similar recovery survey along the Louisiana/Texas state line. Bottles with substantiating evidence enclosed, or fragments of bottles were recovered at 21 of the 69 mounds along that line sixty years previous to our search—one hundred years after the original survey.

The bottles found then were about four inches tall including the neck and had a ground glass stopper (looked like something from a drug store). The parchment notes that they contained were authenticated and photographed by the Federal Bureau of Investigation at that time. Rendezvous coordinator Dan Hampton did his best to obtain one of those bottles for our Surveyors Rendezvous. It seems that only three or four of those twenty-one can be found in the Louisiana state museum. Officials did allow one to be loaned to an associated museum in Texarkana where Rendezvous 2001 participants were allowed to view it.

Other interesting speakers at the meeting were: Jim Flowers of the Texas General Land Office; Norman Brown, now retired from the Missouri Department of Natural Resources; Ben F. Grant, Justice for the Sixth Court of Appeals in Texas; and Johnny Ingram, avid collector of surveying equipment, books, and clocks. Activities other than the lecture sessions, and the mound search field trip, included a visit to Jefferson, Texas where their museum contains much surveying memorabilia. Many of us stood on the monument marking the Arkansas-Louisiana-Texas tri-state corner during that trip and imagined Kearney's men passing through one hundred sixty years earlier. These earlier surveyors would also have passed through the modern day Texarkana Post Office which straddles the state line and uses the postmark "Texarkana, USA". Of course, paraderie is a feature emphasized during the Surveyors Historical Society's Rendezvous. The annual bar-be-cue was held at the Atlanta, (Texas) State Park on Lake Wright Patman, and there was an auction after the banquet the second evening.

One item that came up for sale at the auction was a 36"x40" original oil painting entitled "Marking the Line" created by Kathy Holland especially for the Rendezvous '01. Kathy's husband is a surveyor. The painting depicts a survey party making its way through a cypress swamp with a compass on Jacob Staff—measuring with a chain. The Surveyors Historical Society retained rights to reproduce the painting. As a joint venture with the Texas Society of Professional Surveyors (who helped greatly with the Texarkana Rendezvous) the painting is now available as a quality poster for \$35.00 plus \$5.00 postage & handling or signed and numbered lithograph print for \$55.00 plus \$5.00 postage & handling.

The Surveyors Historical Society is a not-for-profit national organization under California corporate law headquarters at:

300 West High Street, Suite 2
Lawrenceburg, Indiana 47025-1912
812-537-2000

Roger Woodfill is the administrator for SHS. He is a licensed land surveyor registered in Indiana, Ohio, and Kentucky.

Editor's Note: A summary of SHS's 2002 Rendezvous held at Gettysburg, PA October 17-20, involving emphasis on the Mason-Dixon line, will be published in a later issue of the Hoosier Surveyor.

Randall D. Miller Named to Indiana State Board of Registration for Land Surveyors



Randall Miller of Miller and Associates of Marion, IN has been named by Governor O'Bannon to the vacancy on the Board created when John Schneider asked not to be reappointed on the expiration of his term which ended June 30, 2002. Randy Miller was sworn in at the October 11, 2002 board meeting and his four-year term runs to July 1, 2006.

Randy (46) is a native of Grant County and is a graduate of Indiana University and Indiana Wesleyan (Marion). He started surveying for Robert Benedict in Marion in 1975 and became a registered land surveyor in Indiana in 1987 and in Ohio in 1988. He is a member of ACSM, NSPS, Indiana SHS, and has been active in ISPLS's Professional Practice Committee, co-chaired the 2001 State Convention, and founder and past president of the Wabash Valley Chapter, ISPLS. He and his wife, Lori, have been married for 27 years and have three children.

CALENDAR

December 6, 2002

Speaker: Gary Kent

"A Case Study in Theory of Location & Boundary Resolution with Rule 12", 6 CEH Mandatory, Sponsor Wabash Valley Chapter ISPLS, Johanning Civic Center, Kokomo, Indiana

January 15-17, 2003

ISPLS Annual Convention, Marriott Downtown Hotel, Indianapolis, Indiana, Host: Northwest Chapter ISPLS

January 23-24, 2003

KAPS Annual Conference, Owensboro, Kentucky

February 6-8, 2003

PLSO Annual Conference, Columbus Marriott Northwest, Dublin, Ohio

February 18-21, 2003

MSPS Annual Conference, Amway Grand Plaza, Michigan

February 19-22, 2003

IPLSA Annual Conference, Crowne Plaza - Springfield, Illinois

March 29 - April 2, 2003

ACSM Conference, Phoenix Civic Plaza, Phoenix, Arizona

April 3, 2003

Annual Meeting, Indiana Section, ASCE, University Inn and Conference Center, West Lafayette, IN

May 5-9, 2003

Annual Conference, American Society for Photogrammetry and Remote Sensing, Anchorage, Alaska

September 5-9, 2003

Rendezvous 2003, Surveyors Historical Society, Lansing, Michigan. Theme: History of Surveying Education

September 12, 2003

ISPLS Seminar, Abe Martin Lodge, Brown County State Park, Nashville, Indiana

WELCOME NEW ISPLS MEMBERS



July 27, 2002

David Balster - Affiliate

Eric Bass - Student to Associate

Louis Bergman - Member

Jeffory Darling - Member

Angela Gorton - Affiliate

Daryl Higgins - Member to Affiliate

Christopher Howell - Associate

Craig Kuester - Student to Associate

Greg Loveless - Student to Associate

Stephen Vallier - Member to Affiliate

September 7, 2002

Eric Rider - Student

Elijah Cook - Student

Christopher Cooper - Student

David Cox - Member

Jerry Edmondson - Student

Joseph Govert - Student

Andrea Hildenbrand - Student

Lawrence Jones - Student

Brd Kleaving - Student

Brian May - Student

Jeremy Mehringer - Student

Robert Neuken - Student

Mark Olson - Student

Brandon Parker - Student

Wilbur Peak - Member

Mark Reisman - Student

Chad Schwenk - Student

Kenneth Solliday - Member

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