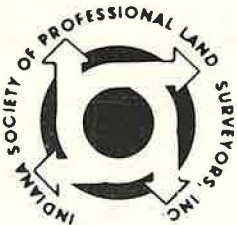


# SURVEYOR

# HOODSIEER



VOLUME 12  
NUMBER 1  
FALL 1985



## RACING INTO TOMORROW

1985 ACSM-ASP  
FALL CONVENTION



SEPTEMBER 8 - 13, 1985 INDIANAPOLIS

### PROGRAM

- Cartography
- Geodesy
- Land Surveying

#### - 200th Anniversary of the Land Ordinance of 1785: A Historical Symposium.

(Contact: Bernard Hostrop, Chief, Division of Cadastral Surveying, Bureau of Land Management (720), Washington, D.C. 20240 202/653-8798).

- Photogrammetric Applications
- Professional Practice
- Primary Data Acquisition
- 40,000 square feet of exhibit space

#### -Remote Sensing Applications

##### - Final LIDQA Symposium: Landsat Image Data Quality Analysis.

(Contact: Brian Markham, Earth Resources Branch, Laboratory for Terrestrial Physics, NASA, Goddard Space Flight Center, Greenbelt, Maryland 20771).

##### - Applications of Coastal and Oceanographic Satellite Remote Sensing.

(Contact: Harold D. Palmer, Exec. Dir., Marine Technology Society, 2000 Florida Ave. NW, Suite 500, Wash. D.C. 20009).

For Information Contact,  
1985 ACSM-ASP Convention  
5355 East 38th Street  
Suite 209  
Indianapolis, Indiana 46218  
317-546-0188

Gary R. Kent, Director  
Jerry Carter, Program  
Daniel Pusey, Exhibits

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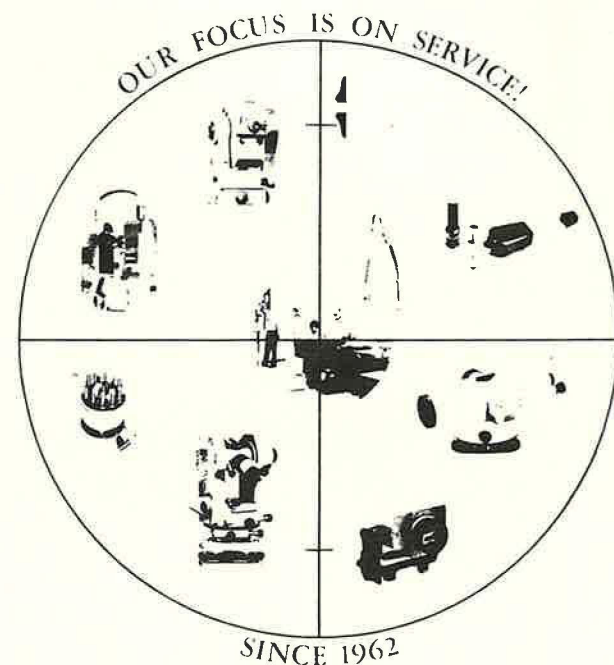


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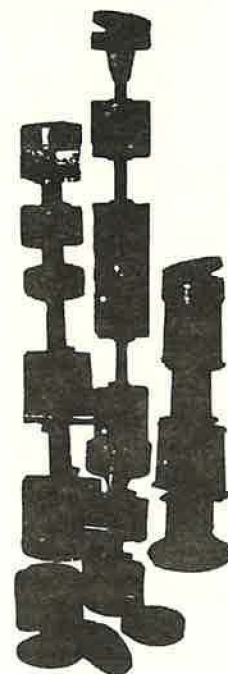


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## HOOSIER SURVEYOR

VOLUME 12 NUMBER 1 FALL 1985

### Committee Assignments as of March 21, 1985

#### STANDING COMMITTEES

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Pat Cunningham - President Elect  
Gary R. Kent - Vice-President  
E. Donald Bengel - Secretary  
Carl M. Anderson - Treasurer

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Art Haase - Co-Chairman  
Wesley Crawford - Co-Chairman

##### Convention Coordinating

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John R. McNamara

##### 1986 Convention

James Q. Morley - Chairman

##### 1987 Convention

Kenneth S. Curtis - Chairman

##### 1985 ASCM-ASP Convention

Gary R. Kent - Director

##### Ethics

Jacob E. Hall - Chairman

##### Finance

Carl M. Anderson - Chairman

##### Legislative

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##### State Board of Registration

Jacob E. Hall - Liaison  
Robert B. Bigelow - Alternate

##### Construction Council

Larry Maning

##### NSPS Governor

Gary R. Kent

#### AD HOC COMMITTEES

##### L.S. Exam

Wesley L. Day  
John V. Schneider  
James Dankert

##### Summer Family Function - 1985

Central Indiana Chapter  
Daniel R. Woo - Chairman

##### Private Practice Committee

Russell C. Eck  
Orwic Johnson  
John E. Fisher

##### Public Relations

Ronald E. Wharry

#### EDITOR'S NOTE

Deadlines for copy for various planned issues of the *HOOSIER SURVEYOR* are as follows:

Winter issue - January 31 Summer issue - July 31 Spring issue - April 30 Fall issue - October 31. The *HOOSIER SURVEYOR* is composed and reproduced by Marbaugh Engineering Supply Co., Inc., Indianapolis, IN.

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317/546-0188

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Gary Kent  
Editor



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CALENDAR

September 8 - 13, 1985	ACSM-ASP Fall Convention, Indianapolis
January 15 - 18, 1986	ISPLS Annual Conference, Evansville Jointly with Kentucky
March 16 - 21, 1986	ACSM-ASP Spring Convention, Wash.,D.C.



INDIANA SOCIETY OF PROFESSIONAL LAND SURVEYORS, INC.  
5355 East 38th Street, Suite 209  
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August 6, 1985

President's Message

Our Society has before it an interesting and difficult challenge to upgrade the Standards of Practice for Land Surveyors in the State of Indiana. The Standards Committee has been working diligently on this upgrading project. They need assistance from all of us to make these standards useful. The first step in bringing life to these standards is to understand the Uncertainty of Position, or Positional Tolerance. To help all of us understand Positional Tolerance and more importantly to help us use this concept in a practical manner, the Education Committee has put on an outstanding workshop.

The things that are happening with standards and education committees are fine examples of the progress that can be made by our society. We can only be as active and progressive as our committees, and the committees can function only if all of us actively support the work of the committees. Therefore, I am asking each of you to volunteer your efforts and expertise in working on the committee of your choice. Elsewhere in this issue is a list of our committees and the name of the chairman. I'm sure that each one would welcome your help. So let them hear from you.

Sincerely,

Robert B. Bigelow, L.S.  
President

RB/hq

Enclosure

ACSM-ASPRS 1985 FALL CONVENTION  
September 8-13, Indianapolis  
PLAN TO BE THERE



HIGHLIGHTS OF BOARD OF DIRECTORS MEETING

December 1, 1984: ISPLS Headquarters  
Attending: Hall, Blankenkaker, Bigelow, Rouch,  
Anderson, Bengel, McNamara, Cunningham  
Not Attending: Manning, Tappen, Kent, Bender

- Legislation for mandatory continuing education has been submitted by Rep. Sheila Kunker.
- Legislative Committee recommends the hiring of a lobbyist for ISPLS.
- Fall workshop was a success showing a profit of \$500.
- Jose Julio LaFrossia was accepted as a life member.
- Status of Membership as of 11-30-84

Members	219
Juniors	46
Students	19
Associates	7
Life Members	45
Firm Members	18
Sustaining	8
	362

- The Registration Board for Professional Engineers and Land Surveyors passed a new regulation at a meeting on November 16, 1984 which reads as follows:  
Effective January 1, 1989, the minimum education requirements for Professional Engineer and Land Surveyor applicants be no less than an earned Bachelors Degree.  
The Registration Board also passed a new definition of "Responsible Direction and Supervision" which reads as follows:  
The term Responsible Direction and Supervision means direct control and personal supervision of land surveying work.

January 16, 1985: Marriott Hotel, South Bend  
Attending: Hall, Blankenkaker, Bigelow, Bengel,  
Cunningham, Bender, Anderson, Kent  
McNamara, Manning  
Not Attending: Rouch, Tappen  
Guests: John Dailey, Area 5 Director, Roger Woodfill,  
Dan Pusey, Art Haase, Ron Wharry

- Dan Pusey, Roger Woodfill, Gary Kent were elected to the board in the election by mail of the membership.
- \$400 was given to Purdue for their scholarship fund. Vincennes has \$794 in their fund.
- Jake Hall announced that Luther Condre is now Chairman of the Registration Board.
- Jack Ryan was hired as lobbyist for ISPLS.

February 9, 1985: ISPLS Headquarters  
Attending: Bigelow, Hall, Anderson, Bengel, Kent,  
Cunningham, Woodfill, Pusey, Blankenkaker  
Not Attending: McNamara, Hall, Manning  
Guests: Pilz, Hudson, WHarry

HIGHLIGHTS CONTINUED

- Treasurer reported the South Bend Conference lost about \$5000.
- Treasurer called for tighter controls on budget items with no over spending without Board approval.
- President made committee assignments.
- Trig-Star was discussed.
- John Beals was elected to replace Pat Cunningham on the Board. Pat is the President-Elect of the Board.
- Continuing Education Bill seems to be dead for this session of the State Legislature. Statue of limitations bill was defeated in committee. A 4 year education bill will not be introduced this year.

March 23, 1985: ISPLS Headquarters  
Attending: Bigelow, Hall, Anderson, Manning, Pusey,  
Kent, Woodfill, Cunningham, Bengel  
Not Attending: Beals, Blankenkaker, McNamara  
Guests: Pilz, Hudson, Wharry, Carter

- Kentucky has agreed to a joint conference in Evansville in 1986.
- Fort Wayne has expressed an interest in hosting a conference. The 1987 conference will be in W. Lafayette.
- Positional tolerance workshops are planned for the summer.
- Various methods were discussed to raise money for scholarships.
- Various bills in the "Hopper" were discussed. Also the possibility of a seperate board of registration for land surveyors. Landscape architects have their own board.
- Various items were reported on by N.S.P.S. Governor, Gary Kent.

April 13, 1985: Room 111 Purdue C.E. Building  
Attending: Bigelow, Anderson, Pusey, Blankenkaker,  
Kent, Bengel, Woodfill, McNamara  
Not Attending: Hall, Cunningham, Beals, Manning  
Guests: Orwic Johnson & Wife, Hudson, Pilz, Wharry,  
John McEntyre, John Bossler ACSM President

- The Society has experienced an increase of \$3000 due to new members
- Roger Woodfill was appointed interim editor of Hoosier Surveyor
- The 1986 Conference is in Evansville, In  
The 1987 Conference is in W. Lafayette, In  
The 1988 Conference is tentatively set for Indianapolis  
The 1989 Conference could be in Ft. Wayne with Ohio
- There will be a reception on May 3 for the 6 new L.S. recipients
- John McEntyre urged the ISPLS to promote the Land Surveying profession among high school students.
- President Bossler gave a report on ACSM activities.



## HIGHLIGHTS CONTINUED

May 11, 1985 ISPLS Headquarters  
Attending: Bigelow, Pusey, Manning, Cunningham, Hall  
Bengel  
Not Attending: McNamara, Blankenbeker, Kent, Woodfill  
Anderson, Beals  
Guests: Pilz, Hudson, Morley

--Morley gave a report on the 1986 conference. Dates are Jan 15-18  
--No business was conducted due to lack of a quorum

June 22, 1985: ISPLS Headquarters  
Attending: Anderson, McNamara, Kent, Pusey, Bigelow  
Hall, Beals, Cunningham, Blankenbeker  
Not Attending: Woodfill, Manning, Bengel  
Guest: Wharry

--The proposed budget for 1985-86 was discussed and approved as revised  
--Possible legislation for the upcoming session was discussed:  
1. Separate registration board for Surveyors  
2. Mandatory continuing education  
3. Four year Land Surveying degree requirement to take the professional examination  
4. Revise the surface mining bill to agree with the Fed. Regs.  
--Agreed to have our financial records audited for 1984-85. This is done every year.

## Gurdon Wattles Remembered

### By Council Friends

Gurdon H. Wattles, long-time friend of many Council members, passed away on January 22. Wattles, a resident of Orange County, was widely known for his expertise in land surveying.

At the Council's convention in Reno, Wattles was posthumously awarded the Distinguished Service Award. The award was accepted by Council member Jim Rems who was a friend and protege of Wattles.

Until his retirement in 1975, Wattles was assistant vice president and consulting engineer for Ticor Title Insurance in Santa Ana. During his career Wattles wrote five books and numerous articles on land surveying, civil engineering, architecture and construction. He also taught college classes and seminars for professional groups.

Wattles was a member of ASCE, ACSM and was a former president of the Orange County Engineering Council.

During World War II, Wattles was captured by Japanese forces, when they invaded Wake Island. He had been on the island as a civilian engineer and was imprisoned by the Japanese from December 1941, until the end of the war.

### Thanks to the Black Widow Spider—Precision for the Surveyor Every Day

A short item in *Omni Magazine* (Oct. 1984, p. 52) under "Continuum" said that the black widow spider "has found a useful and creative niche in human industry." Bill Lawren, author of the brief, said that strands of the spider's web is used to make cross hairs for the eyepieces of delicate surveying equipment. The strands are said to be some 80 times thinner than a human hair. The secret of the web, according to John Miloszar, public relations director for Philadelphia's North American Survey Supply Company, is that it is stronger than steel for its size, pointing out that a strand can be held under a fully turned on faucet and still will not break.

Speaking of the longevity of the web strand, Miloszar said that the plant has seen instruments more than 60 years old with the original web in place.

Miloszar said that harvesting the spiders takes place in the wild. They are pried from rotting logs with a stick and then knocked into a jar. He goes on

to say that when they are taken back to the plant they are isolated in smaller jars and when the plant needs the web, a human handler turns the spider over and "tickles its belly with a stick until it starts to spin."

He says that the spiders can produce up to 2 feet of webbing a day and will continue production until it dies. He adds that the spiders "seem quite content with their human symbiosis," in return for all the flies they can eat. According to Miloszar and Lawren, North American Survey Supply does not plan to raise black widows in captivity, preferring to find and capture productive adults, because what one wants, as in business, is "experience."

To conclude the story of the fabled black widow spider, it is said that it is "probably best known for the kinkiness of its sexual appetite. After mating, the female devours her husband." However, no matter how destructive it is in its own society, it evidently serves surveyors and manufacturers of equipment needing delicate but strong cross hairs well.

Perhaps, if the story needs a moral it could be: "There's something good about everything."

[Sharing an interest: David L. Ingram]

## 1985 ANNUAL MEETING

JANUARY 18, 1985

CENTURY CENTER, SOUTH BEND

--FINANCE REPORT:  
Society is in good financial condition. A monthly computer report is reviewed by the Board.  
--CONTINUING EDUCATION:  
Both 1984 workshops were well attended and profitable.  
Board of Registration has passed a new rule effective January 1989 requiring no less than an earned bachelors degree to take the L.S. exam.  
--1986 CONVENTION:  
Chairman, Jim Morley announced dates of January 15-17, 1986.  
--N.S.P.S. is spending \$200,000 to develop a 28 minute, professionally produced film to promote surveying. ISPLS has been asked to donate toward the project.  
--ETHICS:  
The Attorney General's Office concluded that land surveyors would be violating the law upon reaching any agreement with Record Data, Inc. providing for surveyors to pay a commission to Record Data in return for surveying work.  
--LEGISLATION:  
H. B. 1393 requiring a 4 year degree was not submitted because of problems.  
--SCHOLARSHIP:  
The committee will award a \$500 scholarship at Purdue in 1985. The Vincennes scholarship of \$795 from sources other than ISPLS will be handled by Art Haase.  
--STANDARDS:  
A new set of standards is going to be prepared. The Board of Registration wants us to submit a set of standards.

The "Bridge Award" is given to someone who exemplifies the spirit and philosophy of the poem "The Bridge" by Will Allen Dromgoole. It is awarded for distinguished and benevolent service in the bridging of this decade; for the betterment of the society, the profession, and the future of mankind.

Shown with President, Jake Hall, is the 1984 winner, Wes Day. Wes has been a member of ISPLS since 1968, was secretary-treasurer in 1970, and 1971, President-Elect in 1972, and President in 1973. He was responsible for minimum standard detail requirements for Indiana Land Title Surveys--adopted January 16, 1970 by ISPLS. He was responsible for "Standard Surveyor Location Report" adopted January 29, 1981, by ISPLS.





INDIANA SOCIETY OF PROFESSIONAL LAND SURVEYORS  
PROPOSED NEW BUDGET REPORT  
FOR: 1985-86

INCOME	BUDGET
Membership Associate	\$ 350.00
Membership - Firm	2800.00
Membership - Junior	2600.00
Membership - Regular	20000.00
Membership - Student	300.00
Membership - Sustaining	900.00
Advertising	500.00
Interest	2500.00
Manuals	436.00
Miscellaneous	.00
Scholarship Fund	.00
Workshoos & Summer Outing	4000.00
1986 Convention	25000.00
Rebates	.00
1985 Convention	.00
<b>TOTAL INCOME</b>	<b>59386.00</b>

1985 NATIONAL CONVENTION

EXPENSES	
Commun - Hoosier Surveyor	3600.00
Commun - Misc. Printing	1500.00
Educ - Annual Conference	22000.00
Edu - Manuals	500.00
Edu - Sales Tax	60.00
Edu - Workshops	3500.00
MSC - Awards	240.00
MSC - Committee Expense	400.00
MSC - Gov't. Affairs	5000.00
MSC - Member Development	400.00
MSC - Misc. Expense	1200.00
MSC - Public Relations	720.00
MSC - Insurance	1200.00
Office Exp. Equipment	120.00
Office Exp. Postage	1500.00
Office Exp. Rent	2090.00
Office Exp. Supplies	600.00
Office Exp. Telephone	720.00
Payroll - Secretary	9000.00
Payroll - FICA & FED. TAX	1800.00
Payroll - State Tax	200.00
Payroll - Medical Insurance	720.00
Payroll - State Unemployment	120.00
Payroll - Federal Unemployment	72.00
Payroll - Workmens Comp.	84.00
Prof. Serv. - Accounting	900.00
Prof. Serv. - Legal	.00
Special Serv. - ACSM Delegate	800.00
Special Serv. - President Contingency	240.00
Historic Land Marks	100.00
<b>TOTAL EXPENSES</b>	<b>59386.00</b>

## SUSTAINING MEMBERS

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P.O. Box 63  
1220 "A" Avenue  
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Seymour, Indiana 47274  
812/522-2300

Harrison Marker and  
Instrument Company  
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Anoka, Minnesota 55303  
612/421-1445

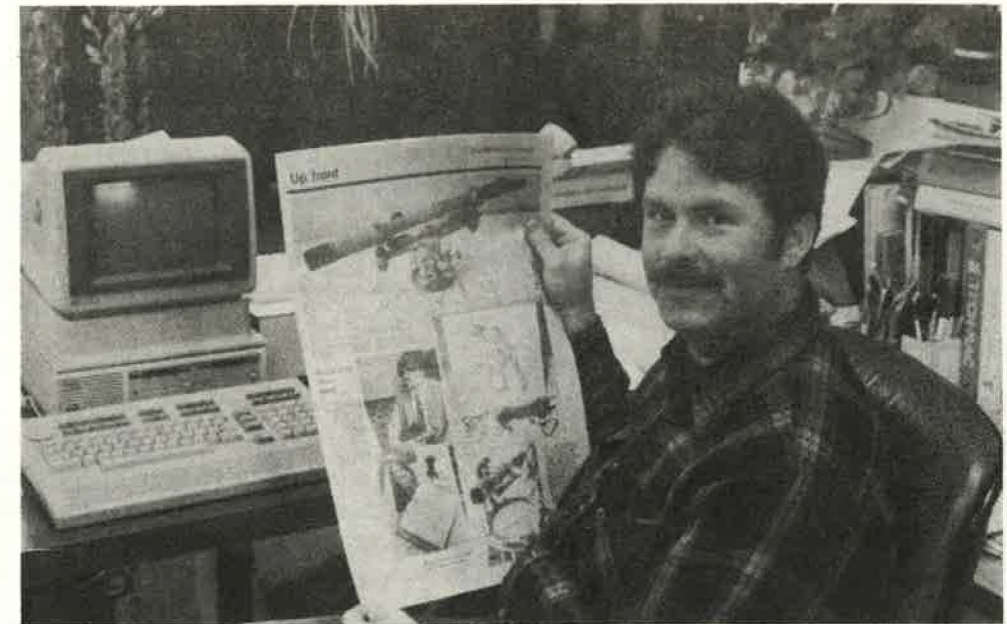
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Supply Co., Inc.  
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Indianapolis, Indiana  
46204

G. Lengemann Company  
2314 N. 5th Street  
P.O. Box 496  
Niles, Michigan 49120

Schonstedt Instrument Company  
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22090

SURV - Kap  
A Division of Allied  
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P.O. Box 27367  
Tucson, Arizona 85726

Kara Co., Inc.  
4400 Riverside Ave.  
Lyons, Illinois 60534



Rich Hudson shows the full page coverage given by the Vidette Messenger to Porter County Surveyors this past month. The newspaper coverage resulted from a surveying display in the Valparaiso library which showed old and new instruments, and other surveying equipment. The display has been organized by Hudson for two years and has received very favorable comments. Rich is secy-treas. of the northwest chapter of I.S.P.L.S.

### Become an ACSM Sponsor Today and Receive an ACSM Coffee Mug...

ACSM is offering a specially designed coffee mug to all members who sponsor a new ACSM member.\* The granite stoneware coffee mug is imprinted with the ACSM emblem in black and gold. This handsome coffee mug is *not for sale*.

To receive your ACSM mug, you must indicate that you are a sponsor in the space provided on the application form at the time it is submitted by the new member.

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210 Little Falls Street  
Falls Church, Virginia 22046

\*This applies only to ACSM member and associate categories.

Western Federation of Professional Land Surveyors is establishing a Speakers Bureau for State and Regional continuing education seminars. Persons interested in conducting seminars through the WFPLS Speakers Bureau, please contact:  
Charles A. Wright  
3657 East Side Highway  
Stevensville, Mont. 59870

Letters of interest should include name, address telephone, subject matter, and previous seminar teaching experience.





INDIANA SOCIETY OF PROFESSIONAL LAND SURVEYORS, INC.

5355 East 38th Street, Suite 209  
Indianapolis, Indiana 46218  
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N.S.P.S.

BOARD OF GOVENORS

Washington, D.C.

March 12, 1985

The duty of the A.C.S.M. delegate is to act as liaison between the Indiana Society of Professional Land Surveyors and the National Society of Professional Surveyors. Your concerns are expressed at the National level thru your governor and then A.C.S.M. can better represent the surveyor in a strong voice at the National level.

The meeting was called to order at 9:00 A.M. by Chairman Martin C. Menk of Minnesota. A copy of the agenda is attached to this report. During the roll call each state was asked if the Governor of their state is required to be a member of their Board of Directors. Thirty Six of the fifty governors were present and only thirteen were required by their state's by-laws to be members of their Board of Directors. The minutes of the previous meeting held in San Antonio, Texas were approved with some minor revisions. The present Chairman, Martin C. Menk and secretary, Jim Aylward were re-elected for another year. Anne Glasgow reported that only 207 Trig-Star packets had been sent. Slight revisions are being made in the Trig-Star program for the coming school year. Bob Todd gave a report on the film project to improve the public's image of the surveyor. Many states have made cash contribution and pledges to support this N.S.P.S. effort. Since Indiana has yet to take a position of supporting this film, I had to remain silent during the reports of other affiliates. Bob Foster gave a preliminary report on a national poll of five hundred selected surveyors to help establish a worthwhile and long term public relations program for A.C.S.M. There was much discussion on requiring a four year surveying degree for licensure. To get some action by each affiliate, the Board of Governors passed a resolution for action (copy attached). Gene Stoner gave a report on better communications by N.S.P.S. with each affiliate. The governors passed a resolution asking each state to revise their by-laws to require their N.S.P.S. Governor to be a member of their Board of Directors.

A proposal on surveying education was submitted by Russell Kastella of North Dakota. The governors voted to establish a committee to study this proposal. John Palatiello gave a report on the Political Action Committee and legislation. He also said N.S.P.S. would not expend all the effort necessary to get National Surveyors Week for 1985, but would concentrate on the 200th Anniversary of the Bureau of Land Management. Membership certificates are now available for a cost of five dollars. A resolution was passed to develop a N.S.P.S. membership pin for sale at a nominal cost.

The meeting was adjourned at 12:30 P.M.

Jacob E. Hall  
Alternate Governor



SCHOLARSHIP RECIPIENT--Mark Berry (right), Patoka, who just completed his first year is Surveying Technology at Vincennes University, has been awarded two scholarships to continue his studies next year. The awards include \$800 from industrial and private support contributions and \$150 from the Central Indiana Chapter of the Indiana Society of Professional Land Surveyors. Berry is a graduate of Princeton Community High School. He is shown in the CAD CAM Lab with Arthur Haase, professor of Surveying Technology.

DIRECTORS OF THE INDIANA HISTORICAL LANDMARKS, INC. FOR 1985

INDIANA SOCIETY OF PROFESSIONAL  
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Jerry L. Martin  
Rt. 1, Box 295  
Valoonia, IN 47281 (812) 358-2812

Roger Woodfill  
202 West High St.  
Lawrenceburg, IN 47205 (812) 537-2000

Garner Wiley  
245 High Street  
Charlestown, IN 47111 (812) 256-5592  
(Resigned, no replacement to date)

INDIANA COUNTY SURVEYORS  
ASSOCIATION APPOINTEES:

Reginald L. McCracken  
923 Hurt Road  
Martinsville, IN 46151 (317) 342-8802  
Morgan County Surveyor (317) 342-1064

Bruce W. Atkinson - Vice-President  
Rt. 3, P.O. Box 415  
Paoli, IN 47454 (812) 723-2524  
Orange County Surveyor (812) 723-3600

Thomas J. Frome  
Route 4, Idlewild Lake  
Jasper, IN 47546  
Dubois County Surveyor (812) 482-5741

Rollyn H. Blankenbeker - President  
P.O. Box 157  
Jeffersonville, IN 47131 (812) 288-5573  
Clark County Surveyor (812) 282-4183

Jeffrey D. Souder - Secretary  
Rt. 3, Box 21  
Perkin, IN 47165 (812) 883-4604



TO: The Professional Surveyors

FROM: E.W. (Gene) Stoner  
Director Area 4, NSPS  
2312 Wilton Drive  
Wilton Manors, Florida 33305

DATE: February 1, 1985

#### EXTERNAL FORCES THAT ARE INFLUENCING THE DIRECTION OF OUR PROFESSION

As a Professional Surveyor I am ALARMED at the forces molding the future of our profession. I am even more alarmed at the lack of unity and concern within our ranks. I find that many of us are uninformed to events and changes that are taking place.

As the Director of Area 4 of the National Society of Professional Surveyors, it is my responsibility to inform the NSPS members, in this case the affiliate members, as to trends, changes and technical advances that influence our profession.

Last May, the president of the National Society of Professional Surveyors asked me to attend and observe the Southern Zone Conference of the National Council of Engineer Examiners (NCEE). NCEE is an organization supported by the Engineer and Surveyor Regulatory Boards from each state. It has a budget to the tune of over two million dollars. It's function is to assist each state board to administer and regulate the profession within its jurisdiction. NCEE also trains and educates board members, and prepares examinations and model laws for each state to adopt.

Within NCEE there are other organizations and committees that influence our profession in various ways. There are so many acronyms that no one knows what they stand for. In any case, there are those that accredit universities and colleges, that evaluate curriculum, and pass on other educational programs.

As an observer at the zone conference, I identified four surveyors among the eighty-five engineers present. Surveyors have not been present at many of these meeting. Only one surveyor member from NCEE spoke and he was a state board member from one of the Carolinas. I believe he is responsible for preparing the surveying examinations. He said "Surveyors know the questions, but don't have the ability to put them in writing." Therefore, the council has contracted with Clemson University to write our examination.

Some of the engineers comments were "Surveyors need to broaden their experience and expertise. There is no excuse for not having a formal education before they can be registered. They should at least have an associate degree. Surveyors want to perform boundary line surveys, which is fine, but many of them are not capable of performing complicated engineering surveys."

Many of you know the Florida engineers attempted to circumvent Chapters 472, Florida Statutes, and perform engineering surveys. Now that their first attempt failed in the Florida courts, they are trying again by changing this service function to "Engineering Studies."

At the NCEE National Convention last August, they prepared and approved a resolution requiring surveyors to have a four year degree as a prerequisite to registration. They also are preparing a Model Law for all states to adopt. NCEE notified NSPS/ACSM of their decision. The American Society of Civil Engineers has also endorsed this policy requiring a formal education.

The National Society of Professional Surveyors, in addition to the regular Board of Directors, has an advisory group called the Board of Governors. This Board of Governors consist of one NSPS member from each State Society or Association. They are the eyes and ears of our profession from across the nation. This advisory board unanimously approved and requested the National Society to require a four year degree. The National Society's Board passed a resolution calling on each state to adopt this requirement with deliberate speed.

There are other technical and scientific advancements that are taking the place of field surveying such as the use of rectified aerial photography, digitizers and computer aided drafting systems. Surveyors will soon be reduced to technicians. With aerial triangulation, objects can be identified and located with uncanny precision. Photogrammetrists can prepare contour map and calculate quantities. In fact, once coordinates are established on various small objects, they will not even require targets.

I could continue and discuss land data systems, satellite surveying and inertial guidance systems, but surely you know all about how they work.

If we do not join in a unified effort and take care of our affairs, others will lead us into oblivion. We will be lucky to remain technicians.

As a professional, you have an obligation to yourself, to your family and to your profession. We cannot stem the tide of change. We can and must lead the way, direct these forces and take advantage of every opportunity.

Join your state society and your national society; unify and support their efforts. We may fail, but never let it be said we did not try. Need I say more?

#### COMPLETED CAREERS

Homer M. Gardner L.S. 9964 passed away on 5/27/84.  
Mr. Gardner lived in Austin Indiana

Arnold Carroon L.S. 12429 passed away on 12/19/84.  
Mr. Carroon lived in Newport, Indiana

Donald B. Thomas passed away on 9/10/84.  
Mr. Thomas a retired State Highway Engineer lived  
in Greenfield, Indiana





Philip Tapp, Bedford, second from left, received a \$400 Scholarship Award (for juniors) from ISPLS and a \$150 Scholarship Award from the Central Ind. Chapter of ISPLS. Gary Kent second from right, from Indianapolis, made the presentations which included a \$200 Scholarship Award from ISPLS for David Blankenbaker, of Jeffersonville. Professor McEntyre, left, spoke on the importance of the scholarships and made the introductions.

## ANNOUNCEMENTS

NOTICE NOTICE NOTICE

ISPLS SURVEYING PUBLICATION SERIES REPRINTS

Publication #1 The Perpetuation of Corners in Indiana  
Available in reprint form for the price of \$15 to members

Publication #3 The Surveyor and The Law  
Available in reprint form for the price of \$15 to members

SEE YOU IN EVANSVILLE ON JANUARY 15 - 18, 1986

THEME: SURVEYING AND THE LAW

ISPLS ANNUAL CONFERENCE - A JOINT CONFERENCE WITH THE STATE OF KENTUCKY

FOR SALE: Surveying (2 crews) and Engineering Business (20 years old) in Plymouth Ind.- Marshall County. Software and hardware and office building. All or part. If interested call (219) 936-5607.

## LIMITED EDITION I.S.P.L.S. BELT BUCKLES

The Scholarship Committee has arranged to have a limited number of these handmade logo belt buckles made in order to accomplish two important goals. One, profits from the sale will be designated for the ISPLS Scholarship Fund and two, these belt buckles will provide the members with a unique way of showing their professional affiliation.

The belt buckles are hand made on plate polished brass, acid etched, and the logo is enamel filled so that normal wear will not destroy the attractive blue on brass logo.

2" x 3.25" Wide Buckle \_\_\_\_\_ \$20 each \* Postage & Handling included

2" x 1.50" Narrow Buckle \_\_\_\_\_ \$20 each \* Postage & Handling included

Send orders to:

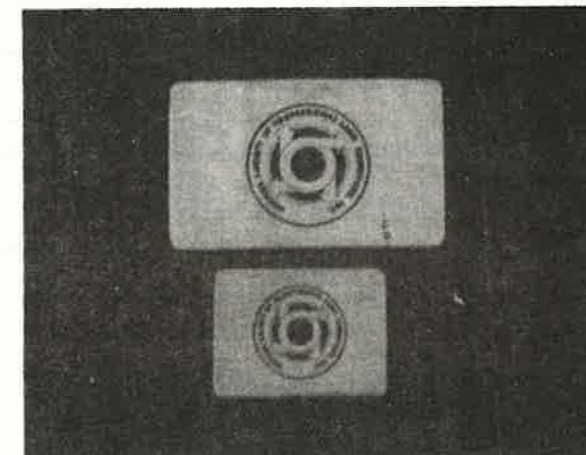
Daniel Pusey  
1738 Klondike Road  
West Lafayette, Indiana 47906

Buckles sent to:

NOTE: Checks are to be made payable to: I.S.P.L.S

Please allow 6-8 weeks delivery

\* Note: Based on the total numbered ordered approximately 25% of the cost will go to support our Scholarship Fund.









## POSITIONAL TOLERANCE

For many years the majority of surveyors have attempted to express the accuracy of their surveys through an expression of relative precision. While this ratio (1:5000, 1:10,000, etc.) is one indicator of potential blunders or errors, it is not a valid measure of the actual accuracy of a particular survey. This is because random errors do not accumulate in direct proportion to the distance surveyed.

A better method of establishing survey quality is needed. Just how close is that monument you set to the true and correct position of the corner you intended to mark? Well, if you paced the distances and estimated the angles, the monument is most likely not very close to the "true corner". It could be off in any direction by several feet. The UNCERTAINTY OF POSITION for this monument is rather high. However, if you used your EDM to measure distances and your two second instrument to turn the angles, you probably feel that the monument is very close to that "true corner". The uncertainty of position is low. If you measured the distances from each direction, turned multiple angles, the uncertainty of position is probably even lower.

This uncertainty of position can be expressed and/or illustrated with an error ellipse. The ellipse establishes an area around the monument within which the true point will lie. If the methods that we used to measure the horizontal distances and angles are relatively consistent in their precision (i.e. 100' tape and one minute instrument, EDM and two second instrument, etc.) we can assume that the ellipse becomes a circle. The size of that circle is an expression of the uncertainty of position for the point.

Some surveyors have jokingly hit on this concept by saying that if the monument set and that "true corner" can both fit under their "hat", the work is okay. In other words, if the uncertainty of position is less than the radius of their hat, they have met their accuracy goal for that point, or survey. The idea of the hat is a good tool to visualize the entire concept. The greater the uncertainty of position, the larger the hat you need to enclose or cover both the point set and the true position.

Few surveyors jump into the performance of a survey without some idea or notion of what level of performance is required. Even if he does not actually sit down with pencil, paper and calculator and ponder the idea, he knows that he had better perform on a much higher level in downtown Indianapolis than he does in the "outback" of some distant rural county. Consciously, or subconsciously, he sets a standard, or tolerance, for that particular survey. He knows what will constitute an acceptable uncertainty of position. The idea of this standard can be expanded into a type of specification for the survey. This specification is represented by the term POSITIONAL TOLERANCE (PT). For my downtown Indy job my positional tolerance will be very small. The error circle (size of my hat) must have a very small radius. For my job in the rural setting, my PT can probably be significantly greater. My "hat" can be a sombrero.

## POSITIONAL TOLERANCE cont.

If we continue to build on this concept, we can see that if we have a specific positional tolerance set as our standard for a survey, we can establish what methods or procedures will be necessary to meet that standard. It becomes obvious that for a PT of 0.5 foot, pacing and a compass will not suffice. I definitely need to use a tape and an instrument of some type. If I am given a PT of 0.05 feet, I will need that EDM and a more precise instrument. I can also determine how many times I will need to turn each angle and measure each line to be able to meet the tolerances established for me or by me.

Most lay people have the mistaken impression that all surveyors' points are exact. When you re-set that monument, it seems to automatically become exactly the correct corner, even if you used the pacing and estimating methods we talked about earlier. "My surveyor set that pipe, so that is the corner." When we leave a client with this impression, we are not being very honest and we are most likely exposing ourselves to unnecessary liability. The concept of positional tolerance is the tool for use to erase this dishonesty and limit some of that liability.

When the client and surveyor meet to discuss the job to be performed, it becomes a simple matter to establish the positional tolerance for that survey. It becomes a major component of the proposal, the work order and the survey (plat) itself. Most often the client will accept the surveyor's recommendation as to the best PT for the job. Many times economics will dictate the level of PT. For any given survey, a small positional tolerance will require more effort and cost than will a larger tolerance. In any event, with a PT established the client knows exactly what he has purchased. Surveyors who follow in your footsteps or tie into your monuments will also know the "value" of those monuments and can conduct their survey(s) accordingly. Liability is decreased.

The concept of POSITIONAL TOLERANCE is an idea whose time has come. We must alter our thinking to embrace this idea as soon as possible. It is an offer we cannot refuse.

## RECTANGULAR SURVEY HISTORY AVAILABLE NOW

**A History of the Rectangular Survey System**, a new volume from the Bureau of Land Management tracing 200 years of surveying in the United States is available now.

The history which provides a reference to rules and regulations governing public land survey as well as the laws upon which they are based begins with events such as the English colonization of America, land tenure systems and the Revolutionary War leading to the first land ordinance in 1785 to 1849.

The volume also includes lists of General Land Office Commissioners and illustrations of original survey maps and diagrams, circulars and much more.

The 774 page book, *A History of the Rectangular Survey System* by Al White, Pioneer Chapter, B.O. member, stock number 024-011-00150-6, available for \$25. Send prepayment to Dept. 36-CQ, Superintendent of Documents, Washington, D.C. 20402, or to order by MasterCard or VISA call (202) 783-3238.

## Border War

A small mistake by a surveyor 117 years ago is causing a big-sized border war over the precise location of the 42nd parallel, the legal boundary between California and Oregon. Residents of New Pine Creek, Oregon, population 220, have no use for Californians and make their feelings obvious even though they are neighborly to residents of New Pine Creek, California.

The mistake was discovered in a special survey conducted by California's State Lands Commission, which said the border was misplaced a half-mile south. Moving the border however, would cause the Oregonians to pay sales taxes and higher vehicle license fees. While the dispute may have to be settled by law suit, "They just can't wait to Californicate Oregon," one die-hard Oregonian said.

Reprinted with permission from: *The Daily Recorder*, Dec. 26, 1984.



## ISPLS SCHOLARSHIPS - Reasons to Give

As the end of the year approaches, now is the time for ISPLS members to consider donating to the ISPLS Scholarship Fund at the University of their choice (Purdue or Vincennes).

When the facts are analyzed, it can be shown that a \$100.00 donation actually costs only about \$20.00 to give.

The 50% Indiana tax credit for donations to state universities automatically cuts your out-of-pocket expenses in half. The entire donation is then also a deductible expense on your federal tax form. If you are in the 30% tax bracket, then the \$100.00 donation breaks down as follows:

\$100 (initial donation) minus \$50 (Indiana tax credit)  
minus \$30 (30% of \$100 donation- deductible expense)  
equals an actual cost of \$20.

Consult with your accountant for your particular case. The Indiana tax credit is good up to a maximum credit of \$100.

Our scholarship fund at Purdue allows your donation to be designated to any of the regional campuses.

Those wishing to donate money towards the Scholarship at Vincennes should make their check out to "Vincennes University, Surveying Scholarship Fund" and send them to:

Foundation Office  
Vincennes University  
Vincennes, Indiana 47591

Those wishing to donate money towards the fund at Purdue should make their checks out to "Purdue University". They should also attach a letter to the check identifying 1) the ISPLS Scholarship Fund and 2) the specific Purdue campus to which they wish their funds be credited. The letter and check should be sent to:

Division of Financial Aids  
ATTN: Ann Lyons  
Purdue University  
West Lafayette, Indiana 47906

These scholarships help some fine students through school and encourage them to become conscientious professionals.

PLEASE GIVE !!

## FEDERAL REGS. MAKE SURVEYOR LEAD PROFESSIONAL IN SURFACE MINING ACT

The U.S. government's Office of Surface Mining has issued final regulations reinstating the land surveyor as "lead professional" in the Surface Mining Control and Reclamation Act (Public Law 95-83, 30 U.S.C. 1257(b)(14)).

The final regulations, published in the April 24, 1985 Federal Register, provide authority for registered professional land surveyors to prepare and certify cross sections, maps and plans required in a surface mining permit application and certain sedimentation ponds and coal processing waste banks in any state which authorizes surveyors to perform such services under its state registration law.

The regulations implement an amendment to a fiscal year 1984 appropriations Act (Public Law 98-146, 97 Stat. 938 (1983)) offered by Senator Robert C. Byrd (D-WV) and signed by President Reagan on November 4, 1983.

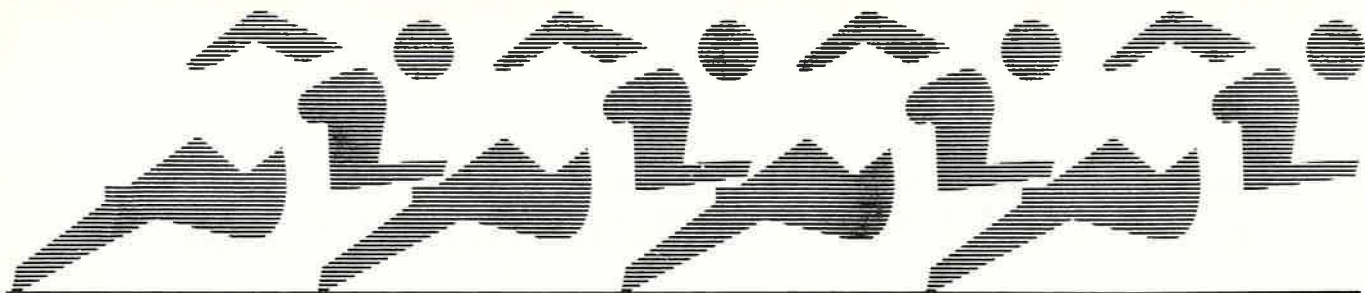
The amendment, initiated by the American Congress on Surveying and Mapping, and its implementing regulations are intended to eliminate conflicts between the federal Surface Mining Act and state registration laws. Until the ACSM inspired amendment was enacted, the 1977 Surface Mining Act preempted surveyors from practicing within certain areas of professional expertise under most state registration laws.

The only service which surveyors are still barred from providing under the Act and its regulations, but can provide under some state laws, is the authority to provide post-construction certification and inspection of impoundments.

According to ACSM Assistant Executive Director for Public Affairs John M. Palatiello, "this service is outlined in another section of the Act and it was not the intent of our amendment to cover these services. However, the Office of Surface Mining is interested in looking at this matter and we have already initiated discussions about another change in the law with key members of Congress."

The regulations became effective on the date of publication in the Federal Register.





# RACING INTO TOMORROW

## AMERICAN CONGRESS ON SURVEYING AND MAPPING

- Are you and your professional team ready for the *Race Into Tomorrow*?
- Are you prepared for the changes in technology, legislation, professional attitude, and public perception which will be occurring in the 21st century?
- Will you be on the leading edge of your profession or will you be left behind in the workplace with outdated professional practices and outmoded equipment?

### Join ACSM for six months—*Special Introductory Membership*



#### It's Up To You To Stay Ahead!

Membership in ACSM can provide you with a competitive advantage. ACSM is a vital, growing professional association with over 10,000 members. ACSM is committed to advancing the surveying and mapping science and promoting the interest of those in the surveying and mapping community. Established in 1941, ACSM now encompasses all branches of surveying and mapping, from individual surveyors, mapping scientists and educators to manufacturers of instruments, equipment and supplies. ACSM's Member Organizations represent the special needs and interests of our members. The Member Organizations are:

American Association for Geodetic Surveying (AAGS)  
American Cartographic Association (ACA)  
National Society of Professional Surveyors (NSPS)



#### Why Wait To Join The Race?

Take advantage of this six-month introductory membership today. Your membership will begin in July, 1985 and continue through December, 1985. You will be able to take immediate advantage of these benefits:

- Subscriptions to ACSM's professional periodicals.
- Discounts up to 50% on the purchase price of publications from both ACSM and ASP catalogues.
- Reduced registration fees at our two national conventions each year, plus the opportunity to view the largest exhibit of surveying and mapping instruments and technology held in the U.S.
- Participation on ACSM's standing and special committees.
- A Hydrographer Certification Program designed to enhance professional image, earning potential, and upward mobility.
- Comprehensive Group Insurance Plan designed exclusively for our members.
- Professional Liability Insurance with savings in premiums to our members.
- Discount Hotel and Car Rental Package for our members.



#### This special introductory membership offer expires September 30, 1985.

Complete the application on the reverse side today! Join ACSM and the *Race Into Tomorrow*!

American Congress on Surveying and Mapping  
210 Little Falls Street Falls Church, Virginia 22046

## Special Six-Month\* Application For Membership

#### Criteria:

This application is for concurrent memberships in the American Congress on Surveying and Mapping (ACSM) and a Member Organization. The Member Organizations of ACSM are as follows:

American Association for Geodetic Surveying (AAGS)  
American Cartographic Association (ACA)  
National Society of Professional Surveyors (NSPS)

#### Member:

Any person who has attained the required qualifications in surveying, mapping and related fields as specified below:

#### AAGS—

Bachelor's or higher degree in a discipline related to geodetic surveying with eight years experience. Up to four years of relevant education may be substituted for experience.

#### ACA—

Bachelor's or higher degree in a field of study which would qualify the person for a professional position in cartography or related fields, or four years of active professional experience in cartography or related fields.

#### NSPS—

- Any person licensed to practice the profession of surveying, according to state or provincial statutes; or
- a GS-1373 employee classified as a Land Surveyor or Supervisory Land Surveyor; or
- an academician holding a Bachelor's or higher degree and the rank of assistant professor or higher and teaching in an ABET or CAB accredited or a state land surveying registration board approved surveying program; or
- a practicing surveyor or a surveying teacher who has attained a minimum of six years experience in responsible charge of surveying activities or four years of education and two years of experience may submit credentials for consideration.

#### Associate Member:

Any person with an interest in surveying, mapping, and related fields, not eligible to be a Member as defined but meeting the criteria stated below:

#### AAGS/ACA—

Any person with an interest in geodetic surveying/cartography who is not eligible to be a Member.

#### NSPS—

Any person who by employment is actively engaged in a program leading to a career in the profession of surveying.

#### Student Member:

Any person pursuing a course of study as a graduate or undergraduate student on a full-time basis (as defined by the academic institution) leading to a career in geodetic surveying (AAGS), cartography (ACA), or surveying (NSPS).

#### How to Apply:

- Determine the highest grade of membership for which you are qualified.
- Determine which Membership Organization you wish to join (in addition to ACSM).
- Complete the Application for Membership.
- Return the completed application to:

ACSM  
210 Little Falls Street  
Falls Church, Virginia 22046  
(703) 241-2446

Membership dues include 6-month subscriptions to *Surveying and Mapping*, \$2.50; *ACSM Bulletin*, \$4.00; and *ACSM News*, \$1.50. This notice is required by U.S. Postal Service regulations. These subscriptions are part of your membership benefits and cannot be deducted from your dues.

#### Dues For July 1, 1985—December 31, 1985

Member Organization	ACA	AAGS	NSPS	ACA AAGS	ACA and NSPS	AAGS and NSPS	ACA, AAGS and NSPS
Member	\$32.50	\$32.50	\$35.00	\$37.50	\$40.00	\$40.00	\$45.00
Associate	\$22.50	\$25.00	\$25.00	\$27.50	\$27.50	\$30.00	\$32.50
Student	All Student Member Dues are \$10.00						

Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_  
State: \_\_\_\_\_  
Zip: \_\_\_\_\_

#### Education:

High School: \_\_\_\_\_ College: \_\_\_\_\_ (Years completed)  
Highest Degree: \_\_\_\_\_  
Experience: (Years) \_\_\_\_\_  
Date of Birth: \_\_\_\_\_  
Occupation: \_\_\_\_\_

Company's or Organization's Name: \_\_\_\_\_

☐ Private Business: \_\_\_\_\_  
(If licensed, give type, state and number)

☐ Government: \_\_\_\_\_  
(Position Classification)

☐ Education: \_\_\_\_\_  
(Position Title)

☐ Other: \_\_\_\_\_  
(Specify)

If Government, Education or Other, but also licensed, give type, state and number: \_\_\_\_\_

#### Read criteria above, then check membership applied for:

(Check only one) (You may check more than one, but see instructions.)  
☐ Member ☐ American Association for Geodetic Surveying  
☐ Associate ☐ American Cartographic Association  
☐ Student\* ☐ National Society of Professional Surveyors  
Former Member? ☐ Yes ☐ No

Sponsor's Name (if applicable) \_\_\_\_\_

Signature of Applicant \_\_\_\_\_

Date \_\_\_\_\_

#### \*Applications for Student membership should have the following certificate completed:

I certify the applicant is a full time student.

Faculty Member Signature \_\_\_\_\_

Date \_\_\_\_\_ Educational Institution \_\_\_\_\_

#### Payment

Enclose the appropriate payment dues with the application. Make check or money order payable to ACSM (For applicants in foreign countries, please draw and remit U.S. dollars payable in the United States.) or charge to your MasterCard, VISA, or Choice.

☐ Payment Enclosed ☐ MasterCard ☐ VISA ☐ Choice

Account Number \_\_\_\_\_

Expiration Date \_\_\_\_\_







Signature \_\_\_\_\_

Date \_\_\_\_\_

\* OFFER EXPIRES SEPTEMBER 30, 1985.



Firm Members

ANDERSON & ASSOC. P. O. BOX 595 LEBANON, IN 46052 PHONE (317) 482-5141	THIS SPACE AVAILABLE TO NEW FIRM MEMBERS	SMITH QUILLMAN ASSOC., INC. 4625 E. MORNINGSIDE DR. P. O. BOX 155 BLOOMINGTON, IN 47402 PHONE (812) 336-6536
WEIHE ENGINEERS, INC. 10505 N. COLLEGE AVE. INDIANAPOLIS, IN 46280 PHONE (317) 846-6611	 PAUL L. CRIPPE, INC. James E. Donkert, P.E., L.S. Partner	 ORDELL L. GERTSMEIER Reg. Pro. Engr., Ind. 9511 Inc. Pro. Land Surv., 9970 DELLER, DANIEL, GERTSMEIER, REINEPT, INC. 111 N. NAPOLEON VALPARAISO, IND. 46383 219/462-1156 HOBART, INC. 219/942-0000
 Plumb, Tuckett & Associates 27 YEARS IN N.W. INDIANA Engineers Architects Surveyors 6481 Taft Street, Merrillville, Indiana 46410 219-980-0500 312-731-6175	JOHN R. DONOVAN, P. E. CIVIL ENGR. & LAND SURVEYOR OFF. 424-7418 RES. 483-3313 2030 INWOOD DRIVE EXECUTIVE PARK FORT WAYNE, IND. 46815	O'Brien Engineering 448 Meadow Lane Madison, Indiana 47250 812/273-4360
 WALLEM ENGINEERING, INC. RALPH M. WALLEM, P.E., L.S. ARCHITECTURAL • CONSULTING • SURVEYING • PLANNING 316 JACKSON STREET HUNTINGBURG, IN 47542 P.O. BOX 52 PHONE (812) 683-3660	Fink, Roberts & Petrie 3307 W. 96th Street Indianapolis, Indiana 46268 317/872-8400	OWENS, RUSSELL AND ASSOC. 1402 E. STATE BLVD. FT. WAYNE, IN 46805 PHONE (219) 484-7500
Mid-States Engineering Co., Inc. 107 N. Pennsylvania Ave., Suite 703 Indianapolis, Indiana 46204 317/634-6235	Paul Primavera & Associates P.O. Box 123 Corydon, Indiana 47112 812/738-4540	317-653-5603 317-653-6710 Alan Stanley & Associates, Inc. ENGINEERING AND SURVEYING 15½ S. Indiana Street Greencastle, Indiana 46135 ALAN STANLEY President
Brady Land Surveying 55308 Jay Dee Street Elkhart, Indiana 46514 219/293-3611	Reid, Quebe, Allison, Wilcox 3901 Industrial Blvd. Indianapolis, Indiana 46254 317/293-7272	 WILLIAM S. TANKE IND. REGISTERED LAND SURVEYOR NO. 8570 LAND SURVEYING SUBDIVISIONS 14 WASHINGTON STREET OFFICE 219 484 2838 RES 219 482-3842 VALPARAISO, INDIANA 46383
WABASH ENGINEERING & SURVEYING SERVICES 610 NORTH 5TH STREET LAFAYETTE, IN 47901 PHONE (317) 742-1662	 United Consulting Engineers, Inc. 5332 N. Temple / Indianapolis, Ind. 46220 JACOB E. HALL Professional Engineer Land Surveyor Bus. (317) 253-1533 Res. (317) 356-1163	VESTER & ASSOCIATES, INC. SURVEYING & SUBDIVISION DESIGN PATRICK N. CUNNINGHAM, R.L.S. PRESIDENT TELEPHONE (317) 742-6479 128 NORTH 3RD STREET LAFAYETTE INDIANA 47901

ISPLS  
APPLICATION FOR MEMBERSHIP

(Type or Print all information - check box for mailing address desired.)

NAME \_\_\_\_\_ Last First Middle AGE \_\_\_\_\_  
☐ HOME ADDRESS \_\_\_\_\_ Street and Number City State Zip PHONE \_\_\_\_\_  
☐ BUSINESS ADDRESS \_\_\_\_\_ Street and Number City State Zip PHONE \_\_\_\_\_  
PRESENT OCCUPATION \_\_\_\_\_ Firm Name Position \_\_\_\_\_  
SCHOOL ATTENDING \_\_\_\_\_ Name Grade \_\_\_\_\_  
REGISTRATION STATUS \_\_\_\_\_ L.S., P.E., or S.I.T. Number State \_\_\_\_\_  
MEMBER OF AMERICAN CONGRESS ON SURVEYING AND MAPPING Yes \_\_\_\_\_ No \_\_\_\_\_  
MEMBER OF LOCAL CHAPTER OF I.S.P.L.S. Yes \_\_\_\_\_ No \_\_\_\_\_ Chapter \_\_\_\_\_

TYPE OF MEMBERSHIP DESIRED	REFERENCES
<input type="checkbox"/> MEMBER ..... \$90.00	Name Address Phone
<input type="checkbox"/> JUNIOR ..... \$50.00	_____
<input type="checkbox"/> ASSOCIATE ..... \$50.00	_____
<input type="checkbox"/> STUDENT ..... \$10.00	_____
Check One	

I hereby certify the above statements are true and correct and that I will abide by the Constitution and By-Laws of the "Indiana Society of Professional Land Surveyors" and will promote and uphold its principles and objectives.

Signature \_\_\_\_\_ Date \_\_\_\_\_

MEMBERSHIP CLASSIFICATIONS

- Member: A member of this Corporation shall be limited to Registered Land Surveyors in good standing with the Indiana State Board of Registration for Land Surveyors. A member shall be eligible to vote, hold office and to participate fully in the affairs of the Corporation.
- Junior: A Junior Membership will be granted to those non-registered individuals who are endeavoring to make Surveying their chosen career. A Junior Member is entitled to vote and participate fully in the affairs of the Corporation but shall not be entitled to hold office.
- Associate: An Associate Membership will be granted to anyone who is associated or affiliated with the Land Surveying profession but is not otherwise pursuing registration or any non-resident who is registered and in good standing as a Land Surveyor. An Associate Member is not entitled to vote or hold office but will receive Newsletters and be invited to participate in meetings.
- Student: A Student Member shall have the same eligibility requirements as those of a Junior Member, except that this class of Membership shall apply for a period of four (4) years only. A Student Member is not entitled to vote or hold office but will receive Newsletters and be invited to participate in meetings.



## THE HOOSIER SURVEYOR

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