



THE

INTERIOR ANGLE

KAPS 2013, Winter Issue

Kentucky Association of Professional Surveyors, 2013 - Issue 1

Photo by Colleen Courtwright



ADVERTISEMENT POLICY

The Interior Angle is the official publication of the Kentucky Association of Professional Surveyors (KAPS). It is published quarterly for the purpose of communicating with the professional surveying community, related professions and others with an interest in surveying. *The Interior Angle* is financed primarily by membership dues although advertisements are welcome from service and product industries relating to the needs and activities of the profession. *The Interior Angle* is mailed to KAPS members and similar organizations on a complimentary basis.

Articles and advertisements appearing in this publication are not the policy of the association unless specifically so stated. The association does not assume any responsibility for statements made or opinions expressed in the articles, advertisements or other portions of this publication. Articles may not be reproduced in whole or in part without the written permission of the editor.

The Interior Angle welcomes and encourages comments, opinions and responses by readers. Letters should be addressed to:

Editor — The Interior Angle
124 Walnut Street
Frankfort, KY 40601

Letters must be signed and include a daytime telephone number. The name of the letter's author may be withheld if requested. Letters may be edited for clarity and length.

The Interior Angle is published quarterly by the Kentucky Association of Professional Surveyors. All advertisements contained within *The Interior Angle* are published as a service to readers. Their publication does not imply or express any endorsement or recommendation by KAPS. The rates are as follows:

| Size | Per Issue/Per Year |
|-----------------------------|--------------------|
| Full Page | \$175.00/\$600.00 |
| 1/2 Page | \$100.00/\$350.00 |
| 1/4 Page | \$65.00/\$225.00 |
| Business Card | \$50.00 |
| Business Card (KAPS Member) | \$25.00 |
| Classified | \$40.00 |
| Classified (KAPS Member) | \$20.00 |

Corporate Members receive a free business card ad in every issue.

Publisher — The Interior Angle
Colleen Comer Courtwright
124 Walnut Street
Frankfort, KY 40601
(502) 695-2349 • (800) 866-3029
E-mail: ComerCourtwrightKAPS@gmail.com

Table of Contents

From the President's Desk
[Page 4](#)

From the President-Elect's Desk
[Page 6](#)

KY BOL The Board Report
[Page 8](#)

KY BOL Board Members
[Page 10](#)

Ky BOL Board 2013 Calendar
[Page 10](#)

Annual KAPS Conference Packet
[Page 11](#)

KAPS/NSPS Joint Membership
[Page 16](#)

KAPS Board Rrport
[Page 20](#)

Andy Kellie "Decisive Action"
[Page 24](#)

"Gravity's Increasing Gravitas; Part 1"
[Page 27](#)

KAPS Membership Application
[Page 34](#)

KAPS 2012 Officers & Directors

President Donald Pedigo, PLS
 President-Elect Thomas Clayborn, PLS
 Vice President,
 External Affairs James Mayo, PLS
 Vice President,
 Internal Affairs John Schneider, PLS
 Past President Brian Cox, PLS
 Secretary Bill Jones, PLS
 Treasurer David Dummer, PLS, PE

Ex-Officio Directors

Professional Development
 Chair Don Pedigo, PLS
 NSPS Governor Craig Palmer, PLS
 KY State Board of
 Licensure Liaison Chris Gephart, PLS
 KSPE Liaison Bob Westermeyer, PLS
 GIAC Liaison Ted Niemann, PE, PLS
 KAMP Liaison (Non-Voting) Steve Lily, PLS

Directors

| | |
|--------------------|---------------------|
| Tom Bushelman, PLS | Doug Comer, PLS, PE |
| Dave Dummer, PLS | Bob Fentress, PLS |
| Bill Jones, PLS | Thad Lucas, PLS, PE |

Chapter Chairs

Audubon Mike Ladnier, PLS
 Barren River Shaun Foley, PLS
 Bluegrass Capitol Kevin Phillips, PLS
 Falls of the Ohio Tim Chilton, PLS
 Green River Bobby Miller, PLS
 Highlands Johnny Justice, PLS, PE
 Jackson Purchase Area Jonathan Payne, PLS
 Northeast Mike Ruggles, PLS
 Northern Kentucky Tim Ryan, PLS
 Southeast Dempsey Miracle, Jr., PLS

KAPS Office Staff

Molly Forrest, Administrative Assistant

An Affiliate of the American
Congress on Surveying and Mapping and
The National Society of Professional Surveyors



KAPS 2012 Standing Committee Chairs & Co-Chairs

Annual Conference Donald Pedigo, PLS &
 Bobby Miller, PLS
 Annual Picnic Donald Pedigo, PLS
 Boy Scouts James Robert, PLS
 By-Laws Tom Bushelman, PLS
 County Surveyors Richard Montgomery, PE, PLS
 Education Dr. Ronald E. Gallagher, PLS
 Ethics & Professional Practice Chris Gephart, PLS
 Finance James Mayo, PLS
 GIS Edmund "Moe" Miller, PLS
 Legislative James Riney PE, PLS
 Membership Robert Westermeyer, PLS
 Minimum Standards Donald Pedigo, PLS
 Nominating Executive Committee
 Past Presidents Richey Newton, PLS
 Policy Manual Tom Bushelman, PLS
 Professional Development James Mayo, PLS
 or Chris Gephart, PLS
 Public Relations Thomas Clayborn, PLS
 Publications / Newsletter Doug Comer, PLS, PE
 Scholarship John St. Clair, PLS

On the Cover: A thin layer of ice
coats a tree at Waveland State
Historic Site on January 16,
2013.

Don Pedigo, PLS

Kentucky Association of Professional Surveyors
124 Walnut Street • Frankfort, Kentucky 40601

From the President's Desk

"THANK YOU"

This is my last article as President so here's a heartfelt **Thank you** to the Board of Directors, the KAPS Membership, and the Surveying Professionals in and around the Commonwealth of Kentucky for making the last two years a success, and very much a pleasure for me. I have enjoyed my term as President and honestly will miss working with your leaders, the membership and Molly in the role of president. Although I plan to stay involved with KAPS and the board of directors as long as the leadership and the members wish me to, I look forward to our new president Tom Clayborn's leadership in the coming year and pledge my support to him and our 2013 leaders. Please join me at the conference in February and allow me the opportunity to thank you in person and to shake your hand. Your overwhelming support over the last couple of years has touched Cathy and me and is truly appreciated.

Our new **Website** is great in my opinion and I look forward to the continued improvements to the Website in the coming years.

SAFETY!

I have talked a lot about safety this year and we are planning a safety seminar for the conference. Please take some time to reflect on your operations and your field procedures while working in the backwoods of Kentucky and on the busy highways that guide us around the Commonwealth. While all the lights, signs, cones, vests, and well founded precautions cannot stop an accident, they certainly reduce the chances.

Make 2013 a great year and kick the year off by taking a moment to discuss safety with your employees and survey crews. Ask and/or remind them to take the time to think about safety and to be acutely aware of their surroundings at all times. "Be Careful out there!"

The following is a brief review of activities since the December issue of the *Interior Angle* and our December 8th Board of Directors meeting:



2013 KAPS Conference – The 2013 conference is rapidly approaching, the dates for the conference are February 20th through the 23rd, 2013. The conference will be held at the Marriott Louisville Downtown Hotel and Convention center. The hotel and convention center are nice, accessible, near all of the downtown attractions and the convention center and meeting rooms are accommodating to our needs. I thank the Conference Committee for their dedication and commitment to making the 2013 conference a success—**Tom Clayborn, John Schneider, Kevin Phillips, James Mayo, Bob Fentress, Bill Jones and Joe Scannell – THANK YOU!**

Fall Seminars – The 2012 Fall Seminars have concluded! The seminars were a success but we need everyone's help for these to continue to be successful. Spread the word about the quality of the seminars KAPS presents to members and non-members needing continuing education hours or just wanting to attend a worthwhile seminar to learn about new surveying technology, machine control, GPS processing, state plane coordinate systems, dendrology, mock trial and/or surveying standards.

We need topic and location suggestions for 2013 – be thinking about it, please.

Legislative Session – 2013 legislative session is in full swing. Our Legislative Committee and Government Strategies, LLC are on top of things and are working on the 2013 legislative session strategies. We will keep you updated on our progress.

Statute of Limitations – KAPS Proposed Amendment to KRS 413.140, Statute of Limitations bill. The bill was sponsored by Representative Brent Yonts. The bill places licensed surveyors under the one year statute of limitations for professionals. This bill made it to the Senate Judiciary Committee with no opposition in the 2012 session before it and we ran out of time to get it passed. We have intentions to file this bill again at the appropriate time.

NCEES-State Specific Exam – NCEES has taken steps toward implementation of computer based testing for both the FS and PS exams. This has raised the question of how and if the State specific portion of the examination can be administered. The cost of the state specific exam becoming computer based as well appears to be cost prohibitive. This topic is currently under review and we as KAPS will be asked to provide input. There will be more discussion on this topic in the coming months. If you have any questions please don't hesitate to contact me.

State Specific Item Writing (Examination Questions) Session - At the Board of Licensure Surveying Committee meeting in September, in addition to a discussion regarding the State Specific Exam, a request was made to KAPS asking for volunteers to assist in a session or most likely sessions for writing test/exam questions for our question bank. We have participated in this type of session before. This is a great opportunity for us to assist the Board of Licensure and the surveying profession. Keep in mind, if you volunteer for this item writing session you will be required to sign an agreement to ensure confidentiality of the examination. So there is no misunderstanding, everyone should note that they give up ownership and all right, title, and interest in any of the questions they submit. The session or sessions will begin later this year and go until probably April 2013. If you are interested in participating in the item writing session, please contact me.

KAPS/NSPS 100% Joint Membership Program

– The proposal from NSPS would require 100% participation from the Association. The fee per member would be \$40 in lieu of the current NSPS membership fee of \$225 (not sure of the exact current fee – but it's close). The purpose of the program is to grow and enhance the profession and have a unified organization and voice. In an email from Curt Sumner recently, he tells us that the societies in three states (Virginia, Tennessee, and Missouri) adjoining Kentucky have already joined the program, and Indiana and North Carolina tell us they are close. This is a program that we need to consider. At our December KAPS Board of Director's meeting a motion was voted on and unanimously passed supporting this NSPS "all-in" initiative. The motion reads as follows:

“Present joint membership with NSPS to the General Membership of KAPS with a fee scale of \$20.00 paid by KAPS and \$20.00 paid by each member”

The KAPS Board of Directors, “**Your Leadership**” reviewed the proposal by NSPS, and the meeting was attended by our NSPS Governor Craig Palmer. Based on a thorough review of the proposal in conjunction with comments from Craig regarding the meeting and proposal, we felt the joint membership would be beneficial to our KAPS members and worthy of a membership review, discussion and vote. Please join us for the General Membership meeting Friday at lunch of the conference to hear more about the KAPS/NSPS Joint Membership initiative.

This is a very busy time for Molly and she continues to do a great job for us in the KAPS office. Please take a minute to call her, or even better yet, stop by the new KAPS office to meet and get to know her.

In closing, thank you for the opportunity to serve you. I promise to continue to serve and support he membership and the Board of Directors to the best of my ability. Please don't hesitate to call or contact me.

Professionally and Sincerely,
Don Pedigo, PLS
KAPS President
270-783-1071 (Cell)
DPedigo@SCRTC.com (Home)

Tom Clayborn, PLS

Kentucky Association of Professional Surveyors
124 Walnut Street • Frankfort, Kentucky 40601

From the President-Elect's Desk

I am honored and excited to be the incoming President of the Kentucky Association of Professional Surveyors. I have been a licensed professional surveyor in Kentucky since 2004 and in Alabama in since 2007. I have worked in the survey business since 1984; currently employed by Morley and Associates, Inc in Newburgh, Indiana. Married to my wife Debbie for 24 years, I am a father of two and a Poppy to six wonderful grandchildren.

I believe any president is successful only when surrounded by good people. I feel very fortunate that we have dedicated and knowledgeable members serving on our board of directors. I am appreciative of the time and efforts each one of them freely give to our organization. Please join me in thanking them for their time, commitment and work hard.

One of my goals this year will be to grow our organization. KAPS is the only organization in Kentucky representing land surveyors and the surveying profession in State politics and education. Regrettably, less than 50% of the licensed professional land surveyors in Kentucky are KAPS members. Land surveyors are the only professionals licensed by the state to protect the land rights of the citizens of the Commonwealth. KAPS needs a stronger membership base to actively participate in protecting these rights. Let's all work together to grow the organization in numbers and influence.


Also, during the upcoming year the Board will present to all KAPS members a proposal for 100% membership to the National Association of Professional Surveyors (NSPS). NSPS is the voice for surveyors in Washington DC and a strong national voice is so very important for our profession in today's economy.



As your new president, I appreciate your support and hope you will not hesitate to contact me with questions, comments, suggestions or concerns. Together we will strive to successfully resolve issues that our profession faces. I look forward to serving each of you in the upcoming year.

Thank You

Tom Clayborn, PLS
tomc@morleyandassociates.com



**COLD WINDS.
SLIPPERY SOLES.
75-FOOT DROP.
WE'RE TOTALLY
COMFORTABLE IN
PLACES LIKE THIS.**

No matter where you're working, the all-new Trimble R10 GNSS receiver makes collecting measurements faster and easier than ever before. The Trimble R10 employs an electronic leveling bubble for increased accuracy and quality assurance, while its lighter, more ergonomic design makes those long days in the field significantly easier. Plus, it offers a long list of all-new surveying technologies you'll soon find indispensable. The new Trimble R10. Because you're not just out there measuring the boundaries—you're pushing them.

See the Trimble R10 at trimble.com/R10showcase.



© 2012, Trimble Navigation Limited. All rights reserved. Trimble and the Globe & Triangle logo are trademarks of Trimble Navigation Limited, registered in the United States and in other countries. All other trademarks are the property of their respective owners.

**FOR MORE
INFORMATION CALL
YOUR TRIMBLE DEALER**

Precision Products
Louisville, KY
502-459-1900

Precision Products
Lexington, KY
859-225-3477

B. David Cox, Executive Director

Kentucky State Board of Licensure for Professional Engineers and Land Surveyors
Kentucky Engineering Center, 160 DEMOCRAT DRIVE • Frankfort, Kentucky 40601

The Board Report

Board Members

Governor Beshear appointed Kenneth R. Sperry, PE, to a four year term expiring January 1, 2017. Mr. Sperry replaces Randall R. Russell, PE, whose term had expired. Mr. Russell was not eligible for reappointment because he had served two consecutive four year terms. We welcome Mr. Sperry to the board and thank Randall for his many years of service to the engineering and surveying professions.

Governor Beshear also reappointed Beverly Smith as our public member to a four year term expiring January 1, 2017. We are pleased to have Beverly continue on our board.

At the January 11, 2013 board meeting, officers were elected as follows for calendar year 2013:

- Chair – David Atwell, PE, PLS
- Vice Chair – David Sigler, PE
- Secretary Treasurer – Sam Williams, PE, PLS

Chair Atwell has appointed the following committee chairs for calendar year 2013:

- Engineering Committee – David Sigler, PE
- Surveying Committee – Sam Williams, PE
- Continuing Professional Development Committee – Richard Howerton, PLS

Engineering and Surveying Exams

The results of the October 2012 exams are below. The second percentage shown in each line below is the national average.

Fundamentals of Engineering

First Time Takers 81/108 = 75%; 69%
 Repeaters 16/37 = 43%; 27%
 Total 97/145 = 67%; 59%

Principles & Practice of Engineering

First Time Takers 64/93 = 69%; 67%
 Repeaters 14/33 = 42%; 31%
 Total 78/126 = 62%; 53%

Fundamentals of Surveying

First Time Takers 6/7 = 86%; 70%
 Repeaters 2/5 = 40%; 43%
 Total 8/12 = 67%; 61%

Principles & Practice of Surveying

First Time Takers 7/10 = 70%; 64%
 Repeaters 5/7 = 71%; 30%
 Total 12/17 = 71%; 50%

Enforcement Statistics 2012

| | |
|------------------------------------|-----|
| Open Cases as of January 1, 2012 | 96 |
| *Cases Opened | 100 |
| **Cases Completed | 113 |
| Open Cases as of December 31, 2012 | 83 |

| | |
|----------------------------------------|-----|
| *69 engineering 31 surveying | |
| **Closed with no disciplinary action | 35% |
| Admonishments, warnings | 25% |
| Other (fines, probation, etc.) | 18% |
| Licenses inactive/retired (CPD issues) | 17% |
| Suspensions | 3% |
| Revocations | 2% |

ENFORCEMENT ACTIONS SUMMARY

For The Period: 06 October 2012 – 11 January 2013

SCOTTY JOHNSON, LSIT

In February 2012, the Board of Licensure received several complaints alleging that Scotty Johnson, LSIT was operating J&J Land Surveys, Inc. without a valid business entity permit and without a licensed land surveyor in responsible charge. An investigation confirmed the allegations. The matter was subsequently resolved through an Agreed Injunction wherein Mr. Johnson is enjoined from further practice of professional land surveying, either individually or through a business entity, unless and until he becomes licensed by the Board. No penalty was assessed for the current violations; however the Agreed Injunction calls for a fine of \$1000 and ten (10) days in jail for any future violation. The Agreed Injunction was entered in the

Franklin Circuit Court on November 20, 2012.

RICHARD HIATT, PE

Pursuant to 201 KAR 18:196, Mr. Richard Hiatt, PE, of Cincinnati, Ohio was subject to an automatic audit of his Continuing Professional Development credits due to late renewal of his professional engineering license. The matter was referred to the Board's enforcement staff after Mr. Hiatt failed to respond to numerous audit notices. After numerous unsuccessful attempts by the enforcement staff to contact Mr. Hiatt, the Board filed formal disciplinary charges in accordance with KRS 322 and KRS 13B, charging him with violating 201 KAR 18:196 Section 9 (3). Mr. Hiatt did not answer the charges and did not participate in the disciplinary hearing process. Upon recommendation of the hearing officer, the Board issued a Final Order revoking Mr. Hiatt's professional engineering license effective January 11, 2013.

KAPUR & ASSOCIATES, Inc.

Kapur & Associates, Inc. of Milwaukee, Wisconsin was disciplined for offering engineering services in Kentucky without a business entity permit, in violation of KRS 322.060. The case was settled by a Consent Decree wherein the firm acknowledged the violation and agreed to pay a \$1000 fine and file for a business entity permit. The Board accepted the Consent Decree on January 11, 2013.

JAYME MALONE, PLS

In June 2011 the Board of Licensure learned that Mr. Jayme Malone, PLS of Lincoln, Nebraska had surrendered his Oklahoma professional land surveying license in settlement of a disciplinary action. An investigation determined that the circumstances of the Oklahoma action were sufficient to warrant reciprocal disciplinary action in the state of Kentucky pursuant to KRS 322.180 Section 11. Additionally, the investigation determined that Mr. Malone had failed to disclose the Oklahoma action when he renewed his Kentucky license. The case was settled by a Consent Decree wherein Mr. Malone acknowledged the violations, and agreed to the following sanctions: (1) Suspension of his surveying license for 90 days, (2) an administrative fine of \$2000, (3) must complete a college level course in professional ethics, (4)

Probation of his surveying license with quarterly review of his surveying projects for two years following completion of the period of suspension. The Board accepted the Consent Decree on January 11, 2013.

DOYLE HARDIN, PLS

In July 2011, in settlement of a disciplinary action against him, Mr. Doyle Hardin agreed to probation of his land surveying license for a period of two years, with quarterly review of his land surveying projects by an independent reviewer. Quarterly reviews of Mr. Hardin's work revealed numerous violations of the surveying Standards of Practice, 201 KAR 18:150. Despite numerous requests by the Board, Mr. Hardin failed to make adequate adjustments to his practice and continued to commit many of the same Standards of Practice violations. Based on the reviews, it was determined that additional disciplinary action was warranted. The matter was settled by a Consent Decree wherein Mr. Hardin acknowledged the violations, and agreed to the following sanctions: (1) Suspension of his surveying license for six months, (2) an administrative fine of \$2000, (3) must retake and pass the 2-hour Kentucky state specific surveying exam, (4) must complete a college level course in professional ethics, (5) must attend Standards of Practice seminars semi-annually through the end of the probation period, (6) Probation of his surveying license with quarterly review of his surveying projects for two years following completion of the period of suspension. The Board accepted the Consent Decree on January 11, 2013.

Coverage That's
Right For You

W.B. Griffin & Son

Insurance Administrators

A Pearl Company

Land Surveyors

Landscape Architects

Engineers & Architects

www.wbgriffininsurance.com | 855.782.0176
127 Cheapside • Lexington, KY 40507-1303

2013 Board of Directors

David Atwell, PE, PLS

Chair

606 New Street
Horse Cave, KY 42749
retiredatwell@hotmail.com

James Sigler, PE

Vice Chair

400 E. Vine St. #300
Lexington, KY 40507
(859) 233-2100
sigler@entran.us

Sam Williams, PE, PLS

Secretary

1555 Old Frankfort Pike
Lexington, KY 40504
(859) 425-2810
swilliam@lexingtonky.gov

Richard Howerton, PLS

Board Member

404A Main St.
Greenup, KY 41144
(606) 473-5684
richard.howerton.sr@howerton-eng.com

Neville Pinto, PhD

Board Member

J.B. Speed School of Engineering,
University of Louisville
Louisville, KY 40292
(502) 852-6281
ngpint1@gwise.louisville.edu

Ben Quinn, PE, PLS

Board Member

65 Aberdeen Dr.
Glasgow, KY 42141
(270) 651-7220
bquinn@aei.cc

James Riney, PE, PS

Board Member

416 W. Third St.
Owensboro, KY 42301
(270) 929-5685
jriney@bellsouth.net

Mike Ritchie, PE, PLS

Board Member

523 Wellington Way
Lexington KY 40503
(859) 321-3804
mritchie@photoscience.com

Beverly Smith,

Board Member

1600 Man O' War Blvd.
Lexington, KY 40513
beverly.smith@insightbb.com

Kenneth Sperry, PE, PLS

Board Member

3 HMB Circle
Frankfort, KY 40601
(502) 695 9800
ksperry@hmbpe.com

John Walz, PhD

Board Member

353 Ralph G. Anderson Bldg.
Lexington, KY 40506
(859) 257-1687
john.walz@uky.edu

2013 Calendar of Events

| | | |
|--------------|----------------------|----------------|
| April 3-6 | NCEES Southern Zone | Biloxi MS |
| April 12 | PE, PS Exams | Louisville KY |
| April 13 | FE, FS Exams | Louisville KY |
| April 19 | Board Meeting | Frankfort KY |
| July 19 | Board Meeting | Frankfort KY |
| August 16 | Board Meeting | Frankfort KY |
| August 22-25 | NCEES Annual Meeting | San Antonio TX |
| October 11 | Board Meeting | Frankfort KY |
| October 25 | PE, PS Exams | Louisville KY |
| October 26 | FE, FS Exams | Louisville KY |

2013 KAPS ANNUAL CONFERENCE

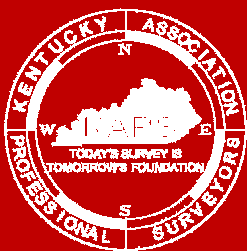
Enriching the Profession

February 21 - 23, 2013

Marriott Louisville Downtown, Louisville, KY



Come learn about the latest technologies such as how this scan of the KFC Yum Center was created.

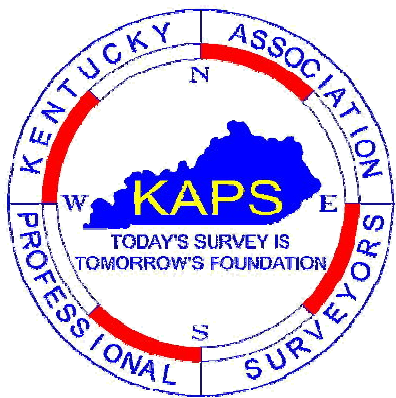


KENTUCKY ASSOCIATION OF PROFESSIONAL SURVEYORS

124 Walnut Street ♦ Frankfort, KY 40601

mforrest@kaps1.com

Online Registration is available at www.kaps1.com.



KAPS

Kentucky Association of Professional Surveyors

124 Walnut Street

Frankfort, Kentucky 40601

Ph.; 800.866.3029, Fax: 502.695.2667

Email: mforrest@kaps1.com

Dear Colleagues:

I am privileged and honored to have been given the opportunity to serve you as the 2012 President. Please accept this letter as my personal invitation to you: join us for the Kentucky Association of Professional Surveyors (KAPS) 2013 Annual Conference. The Marriott Louisville Downtown, Louisville, Kentucky will host the conference. Technical Sessions will commence on Thursday February 21st, 2013 and conclude on Saturday February 23rd, 2013.

Networking is a tremendous benefit of being a member of the association. The conference affords the chance to network with other professionals, technicians, business owners and future team members across the Commonwealth. KAPS sponsored continuing professional development seminars in the fall and at the conference are up to date and reliable. We work closely with the Board of Licensure developing rules and regulations affecting the professional and the public. With the experienced help of our lobbyist, we introduce legislation beneficial to our profession and keep a watchful eye on legislation affecting the profession and professional. As a member, the support of the entire membership is at your fingertips. More importantly, as a KAPS member, you have the ability to stay informed and be involved. If you are not a member, please consider becoming one.

The surveying profession continues to evolve. Join us at the conference to learn about the Kentucky Standards of Practice; experience technological advancements and the latest trends in surveying. Our technical sessions are second to none. The secured conference instructors are experienced and knowledgeable—you won't be disappointed.

The technical sessions and equipment demonstrations at the conference benefit both the non-licensed as well as the licensee, so don't miss this great opportunity to include your non-licensed professionals. The knowledge they leave the conference with will strengthen your business and the survey profession.

For you non-members, please check the registration form where you will find an option to become a member of KAPS within the registration fee. It would be my pleasure to shake your hand and welcome you to our association.

*Please don't hesitate to contact me if you have any questions or if I can assist you in any way. I look forward to seeing you in February—we are **"Enriching the Profession"** Travel safe.*

Professionally,

A handwritten signature in blue ink, appearing to read 'Don Pedigo'.

Don Pedigo, PLS, KAPS President

Enriching the Profession

AGENDA OVERVIEW

Wednesday, February 20

- 4:00 - 7:00 P.M. Registration Opens
- 6:00 P.M. 2012 KAPS Board of Directors Meeting.

Thursday, February 21

- 7:00 A.M. Registration
- 7:00 A.M. *EXHIBITS OPEN*
- 8:00 A.M. - 12:00 P.M. Technical Sessions
- 12:00 P.M. - 1:00 P.M. Luncheon & Installation of Officers
- 1:00 P.M. - 5:00 P.M. Technical Sessions
- 5:00 P.M. - 6:30 P.M. Exhibitors Reception & Door prizes
- 6:30 P.M. - 7:30 P.M. 2013 KAPS Board of Directors Meeting
- 6:30 P.M. - ??? Hospitality Suite

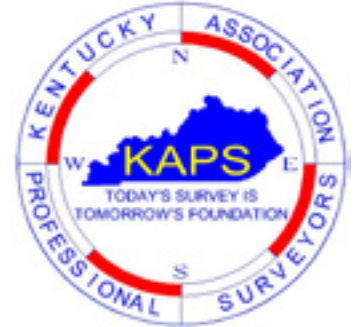
DINNER ON YOUR OWN

Friday, February 22

- 7:00 A.M. Registration
- 7:00 A.M. - 1:00 P.M. *EXHIBITS OPEN*
- 8:00 A.M. - 12:00 P.M. Technical Sessions
- 12:00 P.M. - 2:00 P.M. Luncheon & General Membership Meeting
- 2:00 P.M. - 6:00 P.M. Technical Sessions
- 6:30 P.M. - 7:00 P.M. Photo Sessions
- 7:00 P.M. - 9:30 P.M. Awards Banquet
- 9:30 P.M. - ??? Hospitality Suite

Saturday, February 23

- 7:00 A.M. Past-President's Breakfast
- 8:00 A.M. - 5:00 P.M. Technical Sessions
including PS & FS Exam Review
- 12:00 P.M. - 1:00 P.M. Lunch Included



Register online at
<http://www.kaps1.com>

Scan here:



**280 West Jefferson
 Louisville, KY 40202**

**Reserve your room today
 by calling 502.671.4266**

***Call before January 22
 & mention KAPS to
 receive a discount rate.**



TECHNICAL SESSIONS

*MARK THE SESSIONS YOU WISH TO ATTEND & SUBMIT WITH REGISTRATION FORM
OR ONLINE REGISTRATION IS AVAILABLE AT www.kaps1.com

Thursday, February 21 *Surprising Technology Available at Minimal Cost*
 8:00 A.M. - 12:00 P.M. 4 PDH; Course #12-10-041; Presenter - Dr. Frank Willis, PhD, PE, PLS

Thursday, February 21 *Kentucky 811*
 8:00 A.M. - 12:00 P.M. 4 PDH; Course #12-10-042; Presenter - Timothy Vaughn

Thursday, February 21 *Kentucky / Tennessee State Line Boundary*
 8:00 A.M. - 10:00 A.M. 2 PDH; Course #12-10-074; Presenter - Bob Fentress, PLS

Thursday, February 21 *Building an Effective Website*
 10:00 A.M. - 12:00 P.M. 2 PDH; Course #12-10-034; Presenter - Andrew Dodson

Thursday, February 21 *Un-manned Aerial Vehicle & Close-Range Photogrammetry*
 1:00 P.M. - 5:00 P.M. 4 PDH; Course #12-10-040; Presenter - Dr. Frank Willis, PhD, PE, PLS

Thursday, February 21 *Wilderness First Aid*
 1:00 P.M. - 5:00 P.M. 4 PDH; Course #12-10-035; Presenter - Douglas Wagoner

Thursday, February 21 *Getting to Know Machine Control*
 1:00 P.M. - 5:00 P.M. 4 PDH; Course #12-08-032; Presenter - Glenn Etienne

Friday, February 22 *Least Squares Adjustment Demystified*
 8:00 A.M. - 12:00 P.M. 4 PDH; Course #12-10-036; Presenter - Bruce Carlson & Dean Goodman

Friday, February 22 *Un-manned Aerial Vehicle & Close-Range Photogrammetry*
 8:00 A.M. - 12:00 P.M. 4 PDH; Course #12-10-040; Presenter - Dr. Frank Willis, PhD, PE, PLS

Friday, February 22 *Building an Effective Website*
 8:00 A.M. - 10:00 A.M. 2 PDH; Course #12-10-034; Presenter - Andrew Dodson

Friday, February 22 *The County Surveyor in Kentucky*
 10:00 A.M. - 12:00 P.M. 2 PDH; Course #12-10-075; William Ralph Paris

Friday, February 22 *3-D Mapping: Past, Present, and Future*
 2:00 P.M. - 6:00 P.M. 4 PDH; Course #12-10-037; Presenter - Mark Meade

Friday, February 22 *Kentucky 811*
 2:00 P.M. - 6:00 P.M. 4 PDH; Course #12-10-042; Presenter - Timothy Vaughn

Friday, February 22 *Using the Case Law Reference Book*
 2:00 P.M. - 4:00 P.M. 2 PDH; Course #11-01-000; Presenter - Bud Salyer

Friday, February 22 *Licensure Board Panel Discussion*
 4:00 P.M. - 6:00 P.M. 2 PDH; Course #12-01-013; Board of Licensure Members & Staff

Saturday, February 23 *KRS.322 / MTS / Code of Conduct*
 8:00 A.M. - 12:00 P.M. 4 PDH; Course #12-08-030; Presenter - Marco Rajkovich, Esq., PE, PLS

Saturday, February 23 *Ethical Considerations in Underground Mine Mapping*
 1:00 P.M. - 5:00 P.M. 4 PDH; Course #12-08-031; Presenter - Marco Rajkovich, Esq., PE, PLS

Saturday, February 23 *PS (LS) Exam Review*
 8:00 A.M. - 5:00 P.M. Presenter - Carol L. Morman, PE, PS

Saturday, February 23 *FS (LSIT) Exam Review*
 8:00 A.M. - 5:00 P.M. Presenter - Carol L. Morman, PE, PS

2013 KAPS CONFERENCE REGISTRATION FORM

CANCELLATION REFUNDS: 30 days prior to event: 100% • 10-29 days prior to event: 50% • 0-9 days prior to event: 0%

***MUST INCLUDE THE TECHNICAL SESSIONS FORM WITH COURSES MARKED OR ONLINE REGISTRATION IS AVAILABLE AT www.kaps1.com**

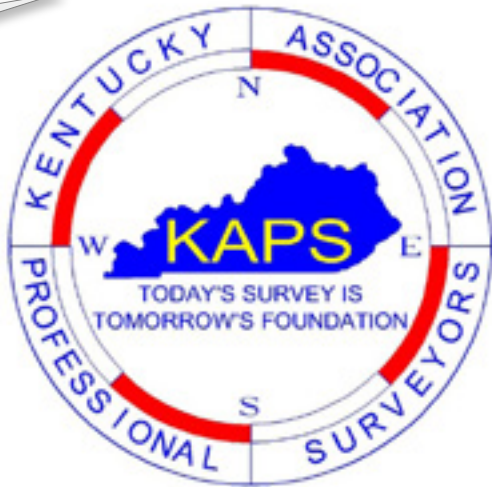
NAME _____ NAME FOR BADGE _____
 LAST FIRST MI
 COMPANY NAME _____ BUSINESS PHONE _____
 ADDRESS _____ CITY _____ STATE _____ ZIP _____
 EMAIL _____ CELL PHONE _____
 SPOUSE ATTENDING? Yes No (circle one) NAME OF SPOUSE _____
 KAPS MEMBER? Yes No (circle one) LIKE TO JOIN KAPS? Yes No (circle one; *form will be emailed)

| REGISTRATION TYPE | MEMBER | NON-MEMBER | AMOUNT |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------------------------------------------------------|--------|
| FULL REGISTRATION Includes Thursday, Friday & Saturday Lunch, Friday Banquet, Admission to Exhibits, Saturday Technical Sessions; lodging NOT included | \$295.00 | \$495.00 <i>(*includes option to become a member)</i> | |
| ONE DAY REGISTRATION Please mark which day you will attend: <input type="checkbox"/> Thursday includes lunch, sessions, & exhibits <input type="checkbox"/> Friday includes lunch, sessions, & exhibits | \$175.00 | \$275.00 | |
| SATURDAY KRS.322 / MTS / CODE OF CONDUCT SESSION ONLY | \$85.00 | \$85.00 | |
| SATURDAY ETHICAL CONSIDERATIONS SESSION ONLY | \$85.00 | \$85.00 | |
| SATURDAY PS (LS) EXAM REVIEW ONLY | \$125.00 | \$125.00 | |
| SATURDAY FS (LSIT) EXAM REVIEW ONLY | \$125.00 | \$125.00 | |
| NON-LICENSED TECHNICIAN REGISTRATION Please mark which day you will attend: <input type="checkbox"/> Thursday includes lunch, sessions, & exhibits <input type="checkbox"/> Friday includes lunch, sessions, & exhibits | \$130.00 <i>per day</i> | \$145.00 <i>per day</i> | |
| FULL-TIME STUDENT REGISTRATION Thursday & Friday only | \$0.00 | <i>per day</i> \$25.00 | |
| EXHIBIT PASS ONLY | \$30.00 | \$40.00 | |
| EXTRA MEALS Please mark below the # of extra meals needed: <input type="checkbox"/> Thursday Lunch / <input type="checkbox"/> Friday Lunch / <input type="checkbox"/> Saturday Lunch <input type="checkbox"/> Friday Evening Banquet (coat & tie event) | \$30.00 \$55.00 | \$35.00 \$60.00 | |
| TOTAL REGISTRATION AND EXTRAS | | | \$ |
| ADD LATE FEE (if postmarked after February 1, 2013) | \$30.00 | \$50.00 | |
| GRAND TOTAL DUE TO KAPS | | | \$ |

CHECK PAYABLE TO KAPS ENCLOSED (mail to KAPS, 124 Walnut Street, Frankfort, KY 40601)

VISA / MASTERCARD / DISCOVER # _____ (email to mforrest@kaps1.com or fax 502.695.2667)

EXP DATE _____ 3-DIGIT V-CODE (on back of card) _____ SIGNATURE _____



NSPS

KAPS/NSPS JOINT MEMBERSHIP

Fellow KAPS members,

The following is an excerpt from a letter sent to the membership of the Virginia Association of Surveyors from a good friend of our NSPS Governor Craig Palmer, PLS, David Holland PLS, NSPS Governor of Virginia, Reprinted with permission.

The National Society of Professional Surveyors met in Charlotte, North Carolina, on May 5, 2012. This was an important and possibly monumental meeting. I am pleased to announce NSPS has completed the merger with ACSM. While this merger period was an uncertain time for our members, we do believe that the new and improved NSPS will better serve and represent all of the various disciplines working within the surveying related fields.

NSPS is looking forward to our continued service in all aspects of the surveying profession, and to do this we need to grow in our membership and represent all of our practicing body. The only way we can enhance our collective voice and keep our national influence at the forefront of those seeking, or those looking to destroy, our services is to present a strong, united, and educated society of professional surveyors not willing to step aside for any reason. In order for the surveying profession across the nation to not only maintain, but enhance our national influence, the first step is to collect our membership into a single unified organization that is represented by, as near as possible, 100% of the surveying profession.

we are an army of one member at a time, the NSPS has developed a strategy to bring our individual state memberships together. NSPS is now offering to the state organizations that come on board with 100% of its voting membership, to simultaneously become a member of NSPS at a huge savings to its members. This concept reduces the cost of a single membership in NSPS from \$225 down to only \$40 and enlarges the NSPS voice at the same time. The land surveyors across the nation need a national voice to protect and fight legislation that could cause irreparable damage to our livelihoods. We can no longer assume our government will do the right thing for its citizens. One gigantic example of what NSPS has done for not only the surveying profession, but just about all users of GPS positioning technology, is the recent issue with the FCC license for Light Squared. If NSPS and other coalition members had not been there to cover our backs and evaluate how this product was going to be employed and the consequences of that deployment, we would all be throwing out our existing GPS receivers and waiting for someone else to develop something that would work around the Light Squared network. And we all know that work around would be even more expensive than what we already have.

We believe this program will help unify and strengthen every state surveying association throughout the United States in order to preserve, protect, and expand our survey profession into the future and leave a legacy for those who follow in our footsteps. In 1776 a group of Virginia surveyors along with other colleagues got together and decided to unify and strengthen the loosely affiliated Colonial States and were very

To step outside the entrenched ways of the past, that

successful in their endeavors. We now call that successful program, The United States of America. We believe it's time for surveyors and colleagues to get together again, and get positive, and make a stand for the surveying profession. We certainly hope you all agree, because to quote Benjamin Franklin, "We must all hang together, or assuredly we shall all hang separately".

We couldn't have said it any better. Space doesn't allow us to express all that NSPS has to offer. But, the joint membership with NSPS comes with many benefits and programs, a sampling of those benefits and programs are:

- ✓ "National" legislative involvement,
- ✓ The Certified Survey Technician Program,
- ✓ Trig-Star Program,
- ✓ NCEES Exam Preparation,
- ✓ Insurance Program (E&O Insurance Discounts),
- ✓ Scholarships,

Please visit www.nsps.us.com to view a complete list of the programs and benefits and to see what else NSPS is doing for the surveying profession.

At our December KAPS Board of Director's meeting a motion was voted on and unanimously passed supporting this NSPS "all-in" initiative. The motion reads as follows:

"Present joint membership with NSPS to the General Membership of KAPS with a fee scale of \$20.00 paid by KAPS and \$20.00 paid by each member"

The KAPS Board of Director's, "Your Leadership" reviewed the proposal by NSPS, and the meeting was attended by our NSPS Governor Craig Palmer. Based on a thorough review of the proposal in conjunction with comments from Craig regarding the meeting and proposal, we felt the joint membership would be beneficial to our KAPS members and worthy of a membership review, discussion and vote. To summarize, we think a joint KAPS/NSPS membership would:

- *Allow all surveyors including KAPS members to participate in NSPS benefits and programs at a modest cost.*

- *Provide KAPS members to unify with NSPS and other Surveying Associations throughout the United States.*
- *Strengthen the Survey Profession within the Commonwealth of Kentucky.*
- *Strengthen the Survey Profession's National Voice.*
- *Create an avenue for our Association to be in an advisory role (Board of Governors) and to possibly have a voting role on the Board of Directors.*

If this initiative is passed in February at the General Membership meeting, KAPS will incorporate membership in NSPS as part of KAPS membership. However, the KAPS dues increase will only be \$20 per regular member, as the Board has decided to front the other \$20 per member. To date, 11 states have full membership approval and an additional 8 states (including Kentucky) have Board approval awaiting membership vote.

As always the entire membership of KAPS is welcome and encouraged to attend any meeting of the Board of Directors. Any of you that have not had the opportunity to see and discuss this proposal, please feel free to e-mail your questions and concerns to either Don or Craig.

Professionally,

Craig Palmer PLS
NSPS Governor – Kentucky
Winchester, Kentucky
Office: 804.744.1218
Office: 800.866.3029
E-mail: cpalmer@palmernet.com

Don Pedigo, PLS
President
Frankfort, Kentucky 40601
E-mail: dpedigo@aei.cc



(800) 251-1280

www.hayesinstrument.com

HAYES

INSTRUMENT CO.

ES

REFLECTORLESS TOTAL STATION

- ▶ 36 HR BATTERY LIFE
- ▶ TS SHIELD ADVANCED SECURITY & MAINTENANCE
- ▶ FAST & POWERFUL EDM
500m NON-PRISM (1,640ft) | 4000 PRISM (13,120ft)
- ▶ EXCLUSIVE LONGLINK COMMUNICATIONS 300m (984ft)



TSShield™ is an advanced telematics-based communications module designed to protect the owner's investment. TShield enables owners to receive on-instrument notices of available firmware updates. Additionally, if the instrument is lost or stolen, a future firmware release will allow the owner to send a coded signal virtually anywhere in the world to the instrument to disable it.

HAYES HAS IT!
ALL ORDERS SHIP DIRECTLY FROM HAYES

THE UN-CONVENTIONAL TOTAL STATION

- ▶ MAGNET FIELD ON-BOARD
- ▶ 20 HR BATTERY LIFE
- ▶ ADVANCED ANGLE-ACCURACY
- ▶ FULL TOUCH SCREEN WITH LARGE GRAPHICS

OS



MAGNET™

MAGNET Enterprise is a web-based solution to manage your field and office data in the cloud. Track your assets and communicate with all those involved on projects. Log in from any browser for live updates. Save time and money.



(800) 251-1280

www.hayesinstrument.com



Trimble® R10 GNSS Receiver

Features

- Smallest and lightest receiver in its class
- Cutting edge Trimble HD-GNSS processing engine
- Automatic point measurement and traceable tilt values
- Electronic bubble so you can focus in one place
- Trimble xFill™ technology provides RTK coverage during connection outages
- Powerful 440 channel solution with Trimble 360 technology advanced satellite tracking
- Pair with Trimble Access and the TSC3 controller for the most powerful solution on the market



**PRECISION
PRODUCTS**

Louisville 502-459-1900
Lexington 859-225-3477
www.yourprecision.com

Advanced Equipment = More Productivity = Greater Profits

Don't forget to visit us at the 2013 KAPS Annual Conference! Stop by the booth and mention this ad for a complimentary item.

KAPS Conference
February 21st-23rd
Marriot Louisville Downtown
Louisville, KY



Saturday, September 15, 2012

Kentucky Engineering Center - Frankfort, KY

Board of Directors

CALL TO ORDER

Don Pedigo, KAPS 2012 President, called the September 15, 2012 KAPS Board of Directors Meeting to order.

PROXY VOTES:

The following proxies were turned in:

- Dempsey Miracle, PLS to John Schneider, PLS (09.05.12)
- Ted Niemann, PE, PLS to William Jones, PLS (09.07.12)
- David Dummer, PLS to Bob Fentress, PLS (09.14.12 via email)

Tom Bushelman moved to accept these proxies. Doug Comer seconded. Bob Fentress amended the motion to only accept Mr. Miracle's and Mr. Niemann's proxies as Mr. Dummer's request was not submitted before the deadline nor was it in the proper format. Mr. Bushelman and Mr. Comer accepted this amendment. Motion carried.

MEMBERS PRESENT: Don Pedigo – 2012 KAPS President; Thomas Clayborn – President Elect; James Mayo – Vice President of External Affairs; John Schneider – Vice President of Internal Affairs; Brian Cox – Past President; Bill Jones – Secretary/Director; Bob Westermeyer – KSPE Liaison; Tom Bushelman – Director; Thad Lucas – Director; Doug Comer – Director; Bob Fentress – Director; Michael Ladnier – Audubon Chapter Chair; Shaun Foley – Barren River Chapter Chair; Kevin Phillips – Bluegrass Capital Chapter Chair; Johnny Justice – Highlands Chapter Chair; Tim Ryan – Northern Kentucky Chapter Chair; Jonathan Payne – Jackson Purchase Chapter Chair

STAFF PRESENT: Molly Forrest – Administrative Assistant

MEMBERS ABSENT: David Dummer – Treasurer/Director; Craig Palmer – NSPS Governor; Chris Gephart – Kentucky Board of Licensure Liaison; Ted Niemann – GIAC Liaison;

Steve Lilly – KAMP Liaison; Tim Chilton – Falls of the Ohio Chapter Chair; Robert Miller – Green River Chapter Chair; Mike Ruggles – Northeast Chapter Chair; Dempsey Miracle – Southeast Chapter Chair

PRESIDENTS WELCOME

President Pedigo welcomed everyone to the meeting. No guests were present.

ADDITIONS OR REVISIONS TO THE AGENDA

Bob Fentress wished to discuss a municipal boundaries issue Kandie Adkinson had discussed with him. President Pedigo added this agenda item to New Business.

REVIEW AND APPROVAL OF BOARD MEETING MINUTES

The minutes of the June 22, 2012 Board Meeting were reviewed. John Schneider made a motion to approve the minutes. Bill Jones seconded. Motion carried.

KAPS OFFICER REPORTS

President's Report – President Pedigo asked everyone to read over his report. He reported he spoke with former KAPS Executive Secretary, Betty Gray, and she is doing well although her husband, Everett, has been diagnosed with Parkinson's disease. President Pedigo also expressed his appreciation for the KAPS office moving crew from the Bluegrass-Capital Chapter. He also thanked anyone that had a part in making the Golf Outing and Picnic a success. He further encouraged everyone to support the fall seminars as well as the conference in February 2013.

President Elect's Report – written report submitted. President Elect Tom Clayborn reminded everyone he was in the process of looking for candidates for KAPS officer positions for 2013.

Treasurer's Report – written report submitted. Bob Fentress mentioned an issue on the Balance

Sheet that has not been addressed: there are additional funds that should have gone into the 4-year Scholarship Fund. The assets should be the same but allocation needs to be addressed. President Pedigo is planning to have a meeting with the accountant before the next Board Meeting to straighten out said issue(s).

Brian Cox made a motion to accept the Treasurer's Report. Bob Fentress seconded. Motion carried.

Administrative Assistant's Report – written report submitted. Molly Forrest also thanked the office moving team. She reported that the new copier has already improved office efficiency. The old copier is still available to anyone interested in purchasing it. Mrs. Forrest also encouraged everyone to "like" the KAPS Facebook page and invite their colleagues to do the same. Work is continuing on the fall seminars. Only one proctor is needed. The Conference Committee has been hard at work on plans for the February conference.

OLD BUSINESS

Plat Law Legislation – President Pedigo stated there was nothing new to report.

Statute of Limitations Legislation – President Pedigo reported the issue was in limbo until the next legislative session. Bob Fentress mentioned moving forward once the chair of the Judiciary Committee is in place and a Senate sponsor is secured.

Membership Clarifications – Article III Section 2(b), Article IV Section 1(b) – Tom Bushelman reviewed the proposed changes (*in italics*):

- *The Fellow Member classification would be done away with. Currently, there are no Fellow Members on the roster.*

Bob Westermeyer mentioned he remembered a chapter granting Fellow Memberships to several long-time KAPS members. The Board of Directors approved those memberships at that time. Mr. Bushelman suggested perhaps their classification had been changed during the renewal process.

- *Lifetime Full Member status would be*

granted with payment equal to 15 years of the current full member dues rate (\$2,625.00).

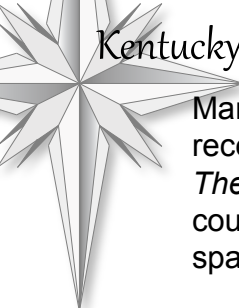
Bob Westermeyer wondered if members of KAPS would be interested in this classification. Doug Comer thought changing the cost to \$1,000.00 may increase interest. President Pedigo cautioned how such a change would affect the budget in the long-run. Jon Payne suggested possibly giving a discount for buying several years membership at one time. Bob Fentress suggested increasing the number of years from 15 to 20. President Pedigo tabled the discussion on Lifetime Membership to enable everyone to have time to consider the option.

- *Honorary Life Membership would be available if the member is nominated by his or her chapter to honor those surveyors making a significant contribution to the profession.*

John Schneider suggested changing the proposed language to read "...surveyors making a significant contribution to the **association and profession.**" Bob Westermeyer suggested changing "nominated by his or her chapter" to "**nominated by a chapter.**"

- *Compatriot Membership would be done away with.*
- *Corporate Members may be listed on the KAPS website within their appropriate chapter area within the "Surveyor Search" function along with appropriate contact information as well as the chapter specific brochures. Additionally, Corporate Members may enroll up to five full-time employees as KAPS members under the appropriate category at a 20% discount from the full price.*

Bob Fentress suggested the opening sentence regarding listing Corporate Members on the website should be changed from the By-laws to the Policy



Manual. Currently, Corporate Members receive a free business-card size ad in *The Interior Angle*. It was suggested that could increase to a ¼ page ad as well as ad space on the KAPS website.

- *Affiliate Membership to be granted upon the recommendation by the appropriate chapter.*

Bob Westermeyer suggested combining Affiliate Membership with Associate Membership. The language on Associate Membership would need to be revised. Sustaining Membership also needs to be combined into Associate Membership.

- *The Membership Roster will be maintained and available to the public on the KAPS website.*

It was suggested to delete “to the public on the KAPS website.”

Jon Payne suggested adding a classification for retired surveyors at a reduced price. Following favorable discussion, President Pedigo asked Mr. Bushelman to prepare language for a retired classification as well as make the other changes discussed and have them ready for review at the December 8, 2012 Board of Directors meeting. Once approved by the Board, the General Membership will need to approve them in February 2013.

NEW BUSINESS

Next KAPS Board Meeting – The next KAPS Board Meeting will be held Saturday, December 8, 2012, 10:00 A.M. EST at the Marriott Louisville Downtown, 280 West Jefferson Street, Louisville, KY 40202.

201 KAR 18:192 Continuing Professional Development Revisions – President Pedigo directed everyone’s attention to the CPD Committee’s proposed changes included in the board packet. Changes include:

- Section 5 – Submittal of information for Pre-Approval of seminars will be changed from 60 days prior to the date of the seminar to

45 days prior to the next scheduled CPD Committee meeting.

- Section 3 – in lieu of 8 hours per calendar year, the section is being revised to 16 hours per reporting period which is 2 years.

The military examination fees are also being adjusted and President Pedigo has that language if anyone wants to see it. Regulations will go into effect in November or December at the earliest.

Kentucky Height Modernization in the Commonwealth of Kentucky

– President Pedigo shared an email he received from Joe Mullins, PLS, Survey Manager, Hamilton County (IN) Surveyor’s Office. Mr. Mullins is moving to Kentucky and would like to get involved in Height Modernization in Kentucky. This email was supplied for informational purposes.

National Museum of Surveying – The National Museum of Surveying has contacted KAPS asking for a donation. KAPS has donated in the past. Doug Comer made a motion to donate \$500.00. Brian Cox seconded. Bob Fentress amended the motion to \$500.00 each year for three (3) years. The amendment was accepted by Mr. Comer and Mr. Cox. Motion carried.

KAMP / GIS Conference – The KAMP / GIS conference will be held September 26-28, 2012 at the Marriott Louisville Downtown. KAPS will be exhibiting at the conference. Bill Jones will look into getting a volunteer to set up the booth. Tom Clayborn plans to attend and take care of the booth on Wednesday of the conference; President Pedigo on Thursday; Doug Comer and / or Bob Fentress may be able to handle the booth on Friday. John Schneider also plans to attend and can help out as needed.

Municipal Boundaries – Bob Fentress has spoken with Kandie Adkinson regarding various Municipal Boundary issues. She would like for Mr. Fentress to be a co-author of an article regarding those issues. Mr. Fentress wanted to get the KAPS Board approval to be a part of the article. Bob Westermeyer made a motion for Mr. Fentress to co-author the Municipal Boundaries article. James Mayo seconded. The motion carried.

EX-OFFICIO DIRECTORS REPORTS

KY State Board of Licensure Liaison – no report; next meeting October 5, 2012

Professional Development Chair – President Pedigo directed everyone's attention to the 2012 Fall Seminar Schedule included in the board packet. He further encouraged the board members to get the word out about the seminars.

CHAPTER REPORTS

Audubon – no written report; Michael Ladnier reported their chapter is working on details for their fall seminar. Additionally, Dr. Ron Gallagher will be speaking at an upcoming chapter meeting.

Bluegrass-Capital – no written report; Kevin Phillips reported that Representative Terry Mills' (KAPS supporter) young granddaughter had passed away in a tragic accident. Brian Cox made a motion for KAPS to donate \$100.00 to an appropriate memorial fund / charity in Representative Mills' granddaughter's name. Bob Fentress seconded. Motion carried.

Falls of the Ohio – no written report; Bill Jones reported 9 attended the last chapter meeting. Doug Comer requested the addresses for the new PLS / LSIT recipients so the chapters can correspond with them. KAPS leadership presenting new PLS / LSIT recipients with their certificates was discussed. Bob Fentress will attend the next Board of Licensure meeting and will ask for KAPS to be able to present said certificates. Johnny Justice also suggested presenting a 25 year pin to those achieving such a goal.

Highlands – no written report; Johnny Justice reported their chapter meets the 3rd Tuesday of the month. The last meeting was a good one.

Northern Kentucky – no written report. Tim Ryan reported the TSAB Golf Outing was a success raising \$3,000. The Northern Kentucky Chapter meets the 2nd Monday of the month.

Purchase – written report submitted. Jonathan Payne reported their chapter is preparing for their upcoming seminar.

COMMITTEE REPORTS

Annual Conference – President Pedigo mentioned the Conference Committee (Don Pedigo, Tom Clayborn, Bob Fentress, Bill Jones, James Mayo, Kevin Phillips, John Schneider, and Joe Scannell) would meet immediately following the board meeting.

Annual Golf Outing and Picnic – President Pedigo directed everyone's attention to the 2012 Golf Income Summary report in their board packet. The golf money available for KAPS and scholarships totaled \$8,178.34. The picnic, however, took a loss of -\$177.79. Allocations after expenses to be given to the scholarship fund totaled \$8,000.55. President Pedigo thanked everyone who participated.

The 2013 Golf Outing / Picnic may be held at the Marriott Griffin Gate in Lexington.

Boy Scouts – Bob Westermeyer moved to take the Boy Scouts off the KAPS Committee list. Brian Cox seconded. Motion carried.

By-Laws – Tom Bushelman reported, upon review, proxies **can** count toward a meeting quorum.

Publications / Newsletter – no written report; Doug Comer reported the next issue of *The Interior Angle* should be coming out later this month. Article submissions are welcome.

Scholarship – written report submitted. The scholarship application has been posted to the KAPS website and mailings have been made to various colleges in Kentucky, Ohio, and Tennessee.

ADJOURNMENT

Bob Westermeyer made a motion to adjourn. Brian Cox seconded. Motion carried. Meeting adjourned.

Respectfully submitted by

Molly M. Forrest for Bill Jones, PLS, Secretary

Edited for content by Doug Comer, Editor.

Andrew C. Kellie, PLS

Department of Industrial & Engineering Technology

Murray State University, Murray KY 42071, akellie@murraystate.edu

Decisive Action

It was later than usual when I got to the office. The planning board had met the night before, and I had had to represent two clients. By the time the meeting was done, so was I. As I walked to the office, I secretly congratulated myself on having given both field crews their assignments the previous evening. With everyone in the field and productive, I could take care of a fussy description of land that was pending. It was pending because it was fussy and I had been putting it off, but with some coffee and gentle handling I could get that off my plate. By then it would be noon, and after lunch the rest of the day would take care of itself. Finally, I seemed to be getting this supervision thing right!

Or not. I was in the middle of the description when Ted called. Ted's crew was running a section of leveling for a drainage project. A classical leveling project is rare in our practice, but the job was in a very flat area, the grades on the pipes were nearly flat, and I strongly suspected that if the flat pipes didn't drain the flat area there would be a flat-out hunt for a perpetrator. Hunting would probably start at the survey office, so I told Ted to be sure his work was tight.

Ted had begun from BM21, leveled west through a series of TBM's that would control construction, and closed on BM22. He had pegged the level and then run the section using three wire methods, per company policy. Now he was at BM22 and had missed the elevation there by 1.27 feet. I was a bit upset. It had been a late night, I was dealing with a fussy description, and now two otherwise competent employees couldn't close a section of leveling.

Since I'm the surveyor, I told Ted his difference was too large to be an error. He had made a mistake, and when one makes a mistake in surveying, it is necessary to find it and correct it because we are only paid for good work. I told

Ted to run the section back to BM21. Turn on all the same points along the way. Find the TBM with the same elevation backwards and forwards. That's where the mistake is. Obviously, decisive action was needed. I hoped I hadn't been too decisive with Ted, but sometimes it is necessary to be decisive if work is to be done correctly and surveyors paid accordingly.

Sam called next. Sam and her crew were retracing a 100 acre parcel that was under option to an established client. The retracement was intended to show whether there were any survey problems precluding subdivision of the property. We had not worked in the area involved before, and the tract actually was in another county. The land had been obtained by patent from the Commonwealth in 1852 by the current owner's predecessors in title. It had come down to the current owner as heirship property. Nothing had been sold. The last survey had been for the patent. The written description was the same as the patent except that for minor scrivener's errors. The family had farmed the south half of the land until the 1930's; the north half had been kept in timber.

Sam was having a problem on the north line. The northwest and northeast corners were described as "Spanish" oaks. Several other "Spanish" oaks were called for on the north line, marked with three hacks, "fore and aft". Sam had found no hacked oaks, Spanish or otherwise. I was a bit upset. It had been a late night, I was dealing with a fussy description, and now two otherwise competent employees couldn't find trees in the woods. The south one-half of the east line was marked by the remains of a wire fence and occasional line trees. There also were line trees—marked with three hacks "fore and aft"—along the west line.

Since I'm the surveyor, I told Sam that if there was boundary evidence on the east and west lines, there must be some on the north, especially since the land always had been in timber. Look again and find it. Obviously, decisive action was needed. I hoped I hadn't been too decisive with Sam, but sometimes it is necessary to be decisive if work is to be done correctly and surveyors paid accordingly.

While Sam was on the phone, Ted called. I told him to chill while I talked to Sam. When I finally called him back, he reported good news. He had closed the level loop on BM21 with only 0.01 feet of error. I was delighted. I inquired about the location of the mistake. Ted said there wasn't any; every TBM had had the same elevation. My delight evaporated. If Ted had closed on his beginning elevation at BM21, the mistake was not in his leveling. It was in one of the benchmarks. If so, we had a 50% chance of having the correct elevation on each of the TBM's Ted had set.

Since I'm the surveyor, I was expected to figure it out. I told Ted what I should have the first time. Begin at BM22. Level west and close on BM23. That would check the benchmarks *and* the leveling. Ted said he had begun that already; he had gotten tired of "chilling" while I was talking to Sam. Obviously, decisive action was needed, and I was fortunate to have a crew chief who was following my example and taking that action.

The fussy description almost was done when Sam called again. She said she had found some boundary evidence. I was delighted. I inquired what kind of line trees she had found. Sam said she hadn't. In fact, there weren't any large trees at all along the north line, and all the timber seemed to be second growth. My delight evaporated. Instead of trees, Sam had found two stone posts about a mile apart. Neither appeared to be on the client, but perhaps the posts were on extensions of the client's line.

Since I'm the surveyor, I was expected to figure it out. I told Sam to tie the stone posts to the rest of our work. Sam said she had done that already because there wasn't anything else to locate anyway. Obviously, decisive action was needed, and I was fortunate to have a crew chief who was

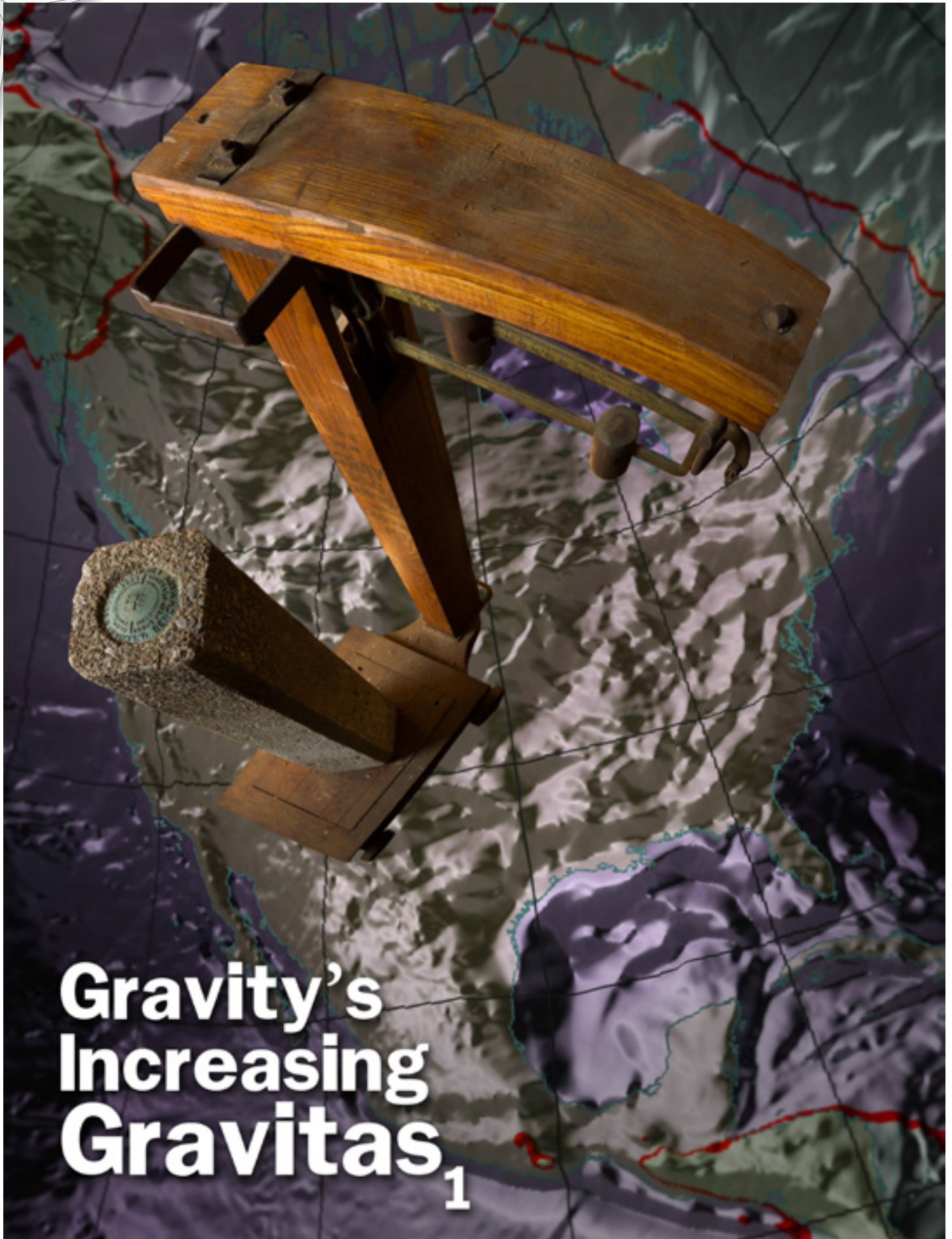
following my example and taking that action.

Still, I was perplexed. The client's deed mentioned no posts. Deeds to the adjoining owners all bounded by adjoiner. At this point we had two stone posts about a mile apart, second growth timber, no line trees on the north but line trees on both the east and west, and the trees at the northeast and northwest corners that were missing. My next decisive action was to visit the courthouse in the neighboring county. It seemed to me that under the tables for the deed books there were some rolled-up maps.

The clerks at the courthouse got a certain amount of entertainment watching me crawl under the table to retrieve the plans. There were three big bundles. Two were TVA drawings from the 1930's. The third was a set of 1918 railroad valuation plans for the Kentucky and Western Railroad, a short line railroad that failed to survive the Great Depression. Sure enough, the south line of the K&W right of way was the north line of our client. The two stone posts Sam had found appeared to be mile markers set on the south right of way line, and there were ties to all of the property lines—including my client—abutting the railroad.

When the K&W had been in operation, locomotives burned coal. Coal burning locomotives discharged hot cinders. Hot cinders started fires. The fires burned timber along the railroad right of way, including line trees marked with three hacks "fore and aft". So why hadn't I found this during deed research? As far as the record goes, if there is no taking, there is no outsale, and the railroad never purchased from my client. If the reason for a servitude ceases, the servitude ceases, and the adjoiners didn't bound by a defunct railroad.

So in the end, I was right after all. The afternoon did take care of itself. I was kept busy at the courthouse. Ted closed the leveling and showed that BM22 had been disturbed. Sam located the two mile posts which helped in our retracement of the client's north line. Reflecting on the day, the only part that didn't turn out as anticipated was the supervision part. It appears that I still need to work on that.



Gravity's Increasing Gravitas₁

Gravity's Increasing Gravitas

The importance of gravity in land surveying (Part 1 of 2)

Written and Illustrated by V. Kelly Bellis, PLS

Gravity's importance in geodesy has long been recognized. Beginning with Galileo Galilei's (1564 - 1642) gravity experiments and theories in the late 16th century, gravity's force, and more over, its global variations, continues to play an ever increasing role for those of us measuring along Earth's surface. The benefits from physical geodesy (the study of Earth's gravity field) also extends well beyond the field of surveying to other disciplines including isostasy, seismology, meteorology, oceanography, climatology and others monitoring the health of our planet. And those are just a few examples with an eye on the Earth.

Today we take it for granted, if we think about it at all, that the centrifugal force along the equator from the Earth's rotation contributes to the decrease in the pull of gravity, and when combined with its greater distance from Earth's center, an object at the equator weighs about 0.5% less than it does if it were at one of the poles, though its mass remains unchanged.

The other primary generalized factor shaping the Earth's gravity field, and that being irregularity of

mass, both at the surface and within the Earth, is basically understood (at least in concept) by most of us today who were awake in school when having been introduced to Sir Isaac Newton (1642 - 1727) and the laws of gravity.

While this article isn't intended to detail the historical developments between Galileo and the current efforts underway by NGS's Gravity for the Redefinition of the American Vertical Datum (GRAV-D)

surveys, there was just too much incredibly cool measuring stuff along the way to leave out and that I think most surveyors will appreciate. So part one of this article is intended to help introduce the future by explaining just a little as to how we got to the present. In part two, we'll catch a glimpse of an individual gravity survey being conducted by NGS.

"So what does gravity have to do with my work in the first place!?"

I'm just a dirt surveyor!"

Equi-what??!

"So what does gravity have to do with my work in the first place!? I'm just a dirt surveyor!" you might ask. Whether we embrace it or not, if we're surveying with any type of GPS equipment we're geodetic surveyors and if our work product is at all concerned with heights and in what direction water is directed, then gravity becomes paramount.

An imagined ideal surface covering the entire planet, somewhere in the vicinity of mean sea level, but totally calm, smooth, void of the effects of tide, currents and breezes is the geoid. It is a surface on which no marble will roll of its own accord. It is a surface determined solely by gravity, and more particularly, where the potential energy of gravity is perfectly equal - no matter where on its surface gravity is measured. It is an *equipotential* surface.

ELLIPSOID

GEOID - EQUIPOTENTIAL SURFACE - GEOID - EQUIPOTENTIAL SURFACE - GEOID - EQUIPOTENTIAL SURFACE

The geoid is the surface on which no marble will roll of its own accord

Measuring Gravity

The gravity pendulum has historically been used in measuring the Earth's gravity field during most of the past 400 years. Its amazing development into both relative and absolute gravity measuring devices (gravimeters) with increasing sensitivity and precision is wonderfully chronicled in the scholarly article written in 1965 by Victor F. Lenzen and Robert P. Multhaupt entitled "*Development of Gravity Pendulums in the 19th Century*". Thanks to the preservation work accomplished through Project Gutenberg, this excellent article is freely available [eBook #35024].

Concurrent with the geodetic research of the late 16th and early 17th centuries focused in understanding the planet's size and shape; i.e., spheroid vs. prolate spheroid (greater diameter in the polar plane) vs. oblate spheroid (greater diameter in the equatorial plane), gravity measurements even then played a significant role in geodesy's development.

Since about the mid-twentieth century spring-based measuring devices have been developed and are widely accepted as the instrument of choice for measuring gravity at a given station relative to another.

The other method employed today in measuring gravity at a given station and determining its absolute value involves the principal of a free-falling object and monitoring its descent with extraordinary precision.

Mendenhall Pendulum – An Early Workhorse

The desolate 43-acre piece of rock rising abruptly nearly 300' above the water in the middle of the Pacific Ocean that native Hawaiians call Mokumanamana was chosen by the Coast & Geodetic Survey to be included in its 1928 survey operations. The gravity station on Necker Island was just one amongst the 342 gravity stations across the United States, Puerto Rico, Alaska and Hawaii reported in its "*Annual report of the Director, United States Coast and Geodetic Survey to the Secretary of Commerce for the fiscal year ended 1928*".

The work party's observations, led by Lt. (J.G.) E. J. Brown, also included astronomic measurements in the establishment of a longitude station with precise time ticks broadcast by the Naval Observatory sounded over the radio equipment also seen in this amazing photo.



Necker Island
23°34'35"N
164°42'0"W

chronograph
with recording
tape

flash
apparatus

Mendenhall
pendulum
apparatus

Timeline Measuring Gravity

| year | notes |
|-------|-------------------------------------------------------|
| 1581 | swinging chandelier Galileo Galilei |
| 1644 | seconds pendulum Marin Mersenne |
| 1672 | Cayenne observations Jean Richer |
| 1673 | Horologium (cycloid) Christiaan Huygens |
| 1687 | Principia published Isaac Newton |
| 1735 | method of coincidences J.J. Mairan |
| 1737 | invariable pendulum Bouguer |
| 1792 | seconds pendulum (Paris) J.C. Borda & J.D. Cassini |
| 1817 | convertible compound pendulum, Henry Kater |
| 1819 | invariable pendulum Henry Kater |
| 1826 | Königsberg experiments Friedrich W. Bessel |
| 1830s | in vacuo experiments Bailey, Wikes, Kater, et als |
| 1862 | Repsold-Bessel Reversible portable pendulum |
| 1872 | U.S. Coast & Geodetic gravity surveys (Pierce) |
| 1875 | structure flexure study Charles S. Pierce |
| 1881 | invariable reversible pendulum, Charles S. Pierce |
| 1887 | 1/2 second w/ chronometer Robert von Sterneck |
| 1890 | 1/2 second improvements Thomas C. Mendenhall |
| 1932 | upgrades to apparatus E. J. Brown, C&GS |
| 1934 | zero-unstressed-spring Luien J.B. LaCoste |
| 1950s | widespread use of spring-based surveys |
| 1970s | development of free- fall absolute meters |
| 1980s | large scale gravity surveys for NAVD |
| 2007 | NGS announces GRAV-D surveys |

Fun facts to know :)

$$F = mg$$

g = gravity's acceleration
and is measured in Gals

$$1 \text{ Gal} = 1 \text{ cm/sec}^2$$

g 's value varies and is
both location and time
dependent

g 's value ranges from about
983 Gals near the poles to
about 976 Gals along the
equator at high elevations

Gals
980.7

980.76

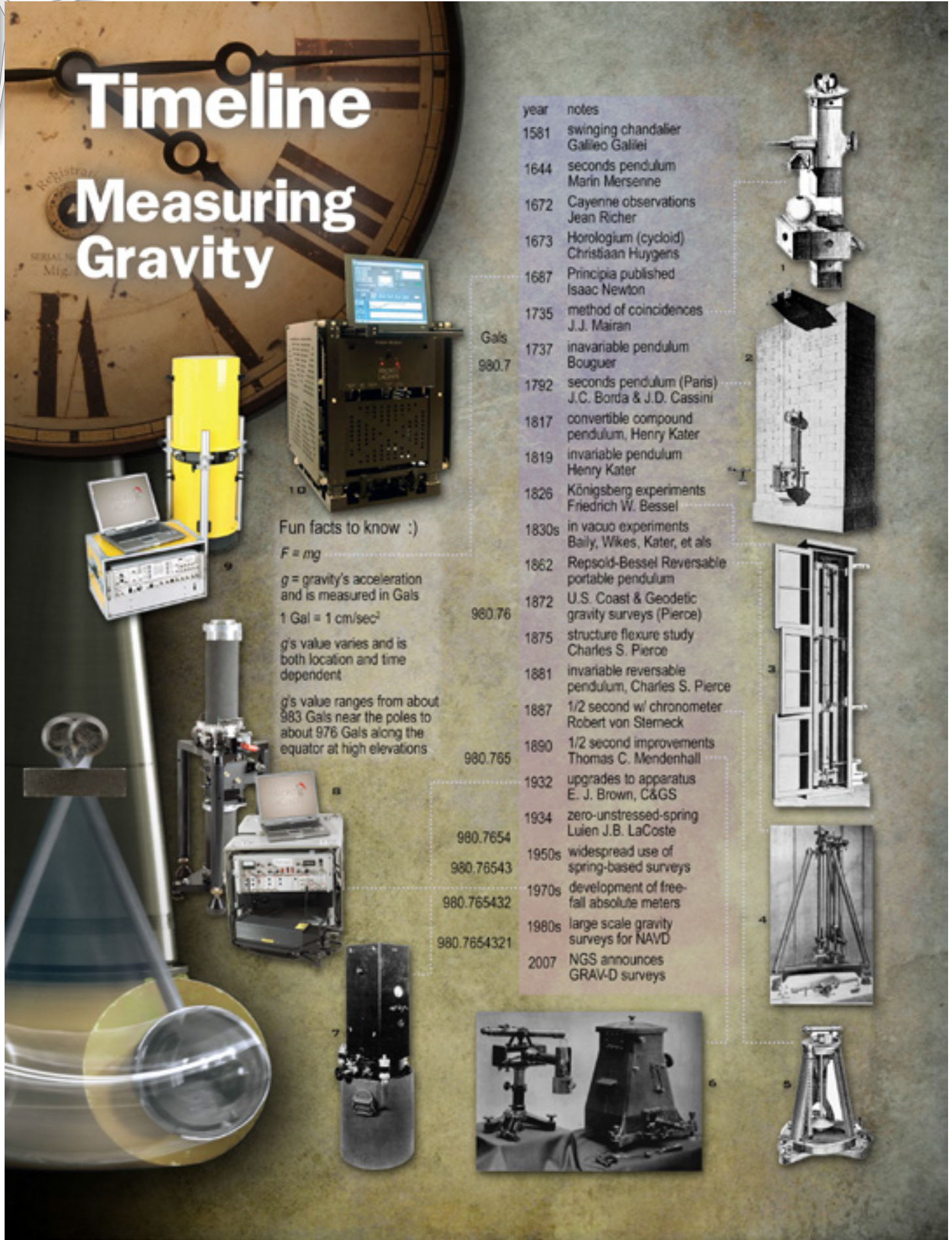
980.765

980.7654

980.76543

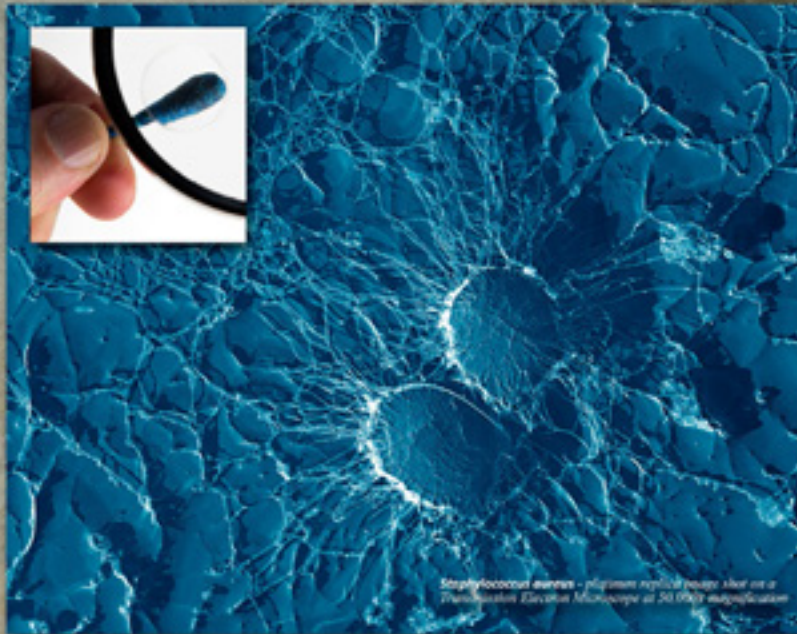
980.765432

980.7654321



The phenomenal development in the ability to measure gravity has been much like going from looking through a hand glass to electron microscopy.

There is a tremendous wealth of information regarding terrestrial-based gravity measurements and its shaping of our past vertical datums which has been omitted from this piece; not to mention ever touching on the amazing gravity measurements being conducted from space. The ever increasing importance of gravity measurements will continue into the immediate future in defining the National Spatial Reference System and in the long term, defining a Global Height System.



A Little About the Timeline Figures

1. Six-ounce copper ball hung by a thread of tampico fiber (derived from the agave plant, also known as pite or pita) over and nearly touching a mirror used in the pendulum's vertical alignment. The length of pendulum is about 37" with its exact length controlled by the topmost micrometer in experiments done by the French geodesist C.M. de la Cordaine - source credit: Portion of plate 1, Mémoires publiés par la Société française de Physique, vol. 4

2. 22-ounce platinum ball 1.5" diameter suspended by an iron wire 12' in length in front of a seconds clock used in experiments determining the exact length of the "seconds pendulum". Observations of the coincidences were made through the telescope (shown closer than originally drawn). The derived length of the pendulum with its half-period of one second was in close contention with another derived length in defining the meter in the late 18th century using the meridional definition - source credit: Plate 2, Mémoires publiés par la Société française de Physique, vol. 4

3. Two different points of suspension allowed the ball hung from a thin strand of wire to be used in different experiments by Friedrich Wilhelm Bessel in determining the length of the seconds pendulum. The apparatus was isolated from air disturbances in a cabinet that stood about 10' tall and the method of coincidences employed using a projected image of the clock pendulum onto the gravity pendulum using a lens - source credit: Plate 6, Mémoires publiés par la Société française de Physique, vol. 4

4. The Royal Prussian Geodetic Institute in 1866 had A. Reipsoid & Sons build this portable reversible (pendulum geometrically symmetrical) based on Bessel's design developed in 1862 which uses two micrometer microscopes which enhanced measurements. The Reipsoid-Bessel reversible pendulum became the instrument of choice throughout Europe and was adopted for field work under Benjamin Pierce, Superintendent of the U.S. Coast Survey sometime prior to 1872 and shown pictured here circa 1875.

5. The portable 1/2 second pendulum developed by Maj. von Stemeck and perfected in 1887 stood about two feet high, contained a non-reversible pendulum 1/2 meter in length with a 1/2 second swing which took place in a vacuum. The other major technological advancements included observation of the coincidences with chronometer signals and the relayed electrical spark seen through the telescope.

6. Thomas Corwin Mendenhall, Superintendent of the U.S. Coast and Geodetic Survey ordered construction in 1890 of this 1/2-meter, 1/2 second non-reversible, invariable pendulum based on von Stemeck's design with modifications that included a flash apparatus beneath the telescope whose shutter was controlled by the chronograph. The light source was from a kerosene lamp or an electrical spark. The Mendenhall pendulums were used extensively throughout the United States in gravity surveys for the next 40 years.

Note: Figures 1 through 6 were obtained from the earlier cited eBook #35024

7. Significant improvements to the Mendenhall pendulum are credited to Lt. E. J. Brown of Coast & Geodetic Survey included increased stability during observations, maintaining the pendulum chamber's vacuum for entire field seasons, improved transportation handling and better time scaling. The Brown pendulum became the country's next workhorse for gravity surveys conducted across the nation until being retired from service around 1960 - photo credit NOAA Photo Library

8. Micro-g LaCoste's FG5 was first introduced in 1992 for measuring an absolute value for gravity using the free-fall principle where the trajectory of the falling object is precisely monitored using an interferometer and a Helium-Neon laser all tied into the precise timing controlled by an onboard atomic clock. This device also features sophisticated real-time gravity corrections for tides, ocean loading, polar motion and atmospheric attraction. After 24 hours of observation at a quiet site is reported being able to measure gravity to a precision of 0.000002 Gal or 2 microGal!

9. Eight years after the FG5 was first introduced, Micro-g LaCoste's A10 "portable" gravimeter was created. Weighing in with a total combined weight of over 230 lbs, this unit has become NGS's instrument of choice and is currently being used for ground-based absolute gravity measurements tied to the GRAV-D airborne surveys. Like its laboratory big sister, this instrument employs similar principals and technologies offering in-the-field 10 microGal precision with 10 minutes of observation.

10. NGS's primary thrust of the GRAV-D surveys presently underway across the United States utilizes Micro-g LaCoste's Turkey Airborne Gravity System (TAGS) Air-Bi Gravity Meter which combines the principals of a highly sensitive spring-based gravimeter, integrated differential GNSS positioning and advanced onboard data processing allowing the raw field data to be immediately examined in identifying data quality. This data then is post-processed in conjunction with ground based data from the A10 and other static control for each survey to yield reported accuracies of 1000 microGals or better (or 1.0 millig-Gals if you prefer :)

Many thanks to all who helped with their kind assistance and helpful information including Vicki Childers (NGS), Dru Smith (NGS), Dan Winester (NGS), Franz Barthelmes (ICGEM), Wolfgang Köhler (ICGEM) and Franz Ossing (GFZ)



V. Kelly Bellis is a professional land surveyor and President of Horizon Surveying Company, Inc. in Edinboro, Maine. Kelly is also an artist and photographer by avocation. He may be reached at kellybellis@gwi.net

Notes



Cover Illustration – Part One

The background rendering of the geoid is based upon data from GFZ German Research Centre for Geosciences's online calculation service, and in particular, is from the combined model EIGEN6C. This model combines satellite data of varying types (from LAGEOS, CHAMP, GRACE and GOCE) and surface data. The jaw dropping resolution is partly due to 1) improved and new methods of measuring SLR Satellite (LAGEOS, ERS), GPS (CHAMP), K-Band Ranging (GRACE) satellite gradiometry (GOCE), increases of accuracy in the measurement of surface data (airborne gravimetry and satellite altimetry) and 2) the long-term data series.

Juxtaposed above the geoid rendering, is poor old forgotten PR0115, or more affectionately known as N 76, one of the many benchmarks set by C&GS nearly 80 years ago (in the heady days of NGVD29) and whose datasheet indicates "STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO SURFACE MOTION". This iconic monument highlights one of the most important reasons for surveyors to help in the timely adoption of NGS's advancing geometric datum and modernized height system. Incidentally, N 76 was found lying horizontal by the roadside, having fallen victim of regrading and ditching efforts along State Route 200.

All spatial content and its associated mapping (including the illustrations of the geoid!) was done using the software program Global Mapper. Many thanks go out to Mike Childs of Blue Marble Geographics for his unparalleled support.

Additional graphic embellishments were done using Adobe's Photoshop, CS6.

PDF copies of this article (both parts one and two) are available at: <http://panocea.us/gravitys-increasing-gravitas/>

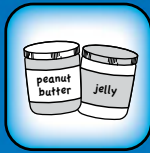
Be sure to check out the Geoid Gallery for additional illustrations and content at: <http://panocea.us/geoid-gallery/>

COPYRIGHT NOTICE

The contents of this document are copyright protected; V. Kelly Bellis, all rights reserved.

Permission is hereby granted (and encouraged!) to freely copy and distribute this document in part or its entirety in any form or media so long as 1) you do not charge for any content and that 2) any distributed content include this copyright notice. Charging a reasonable fee for copy expenses is allowed.

Check out the April edition of *The Interior Angle* for Part 2 of this story.



Peanut Butter & Jelly



Shirt & Tie

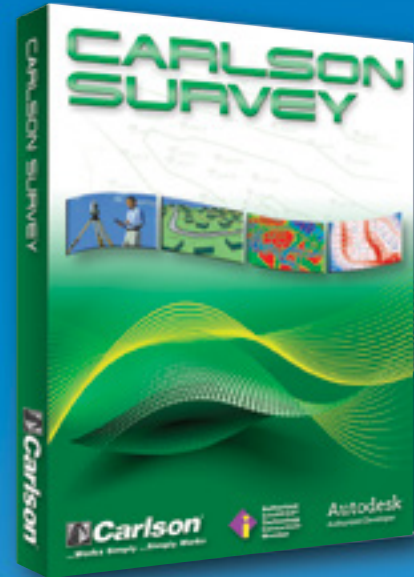
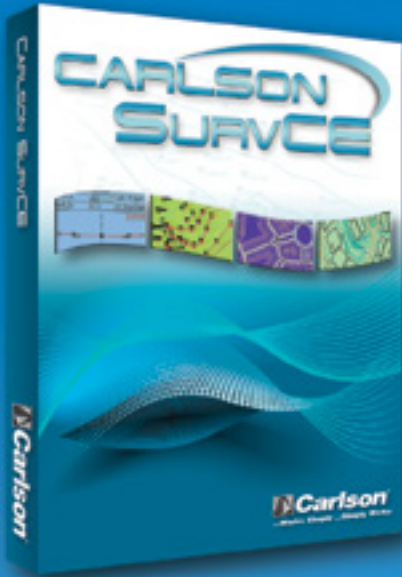


Batman & Robin



Rock & Roll

These Go Together Just Like



Get Complete Control of Your Data Flow* with Carlson SurvCE in the Field & Carlson Survey in the Office



***You'll be able to transform your field-survey data into flawless maps and CAD drawings with the powerful office design package, Carlson Survey 2013**

- **Save time & money** – Using Carlson SurvCE with Carlson Survey saves tedious drawing and interpretation in the office
- **Work seamlessly** – Using Carlson SurvCE and Survey together means no conversions, nothing lost in translation between field and office
- **Increase accuracy & speed** – Downloading Total Station and GNSS data from Carlson SurvCE is speedy with Carlson Survey and converts your survey into accurate 2D or 3D drawings
- **Easy to use & intuitive** – Carlson SurvCE users will find Carlson Survey both easy to learn and powerful to use

Download a free demo or find a dealer near you at www.carlsonsw.com.

For more information: 606-564-5028

 **Carlson**[®]
...For the Total Project

 Authorized IntelliCAD[®] Technology Consortium Member

 Autodesk[®]
Authorized Developer

 Free Technical Support
By Phone, Email, and Web



Civil Engineering
Land Surveying
Transportation Engineering
Materials Testing
Land Planning
Landscape Architecture

183 Saint Charles Street
Bowling Green, KY 42101
Office: 270-842-0812
Fax: 270-842-0910
www.landmarkengineering.net

- Quality •
- Innovation •
- Integrity •
- Satisfaction •



Your Project, Our Promise

Professional Consulting Engineers and Land Surveyors

Georgia · Kentucky · North Carolina · South Carolina · Tennessee

1-800-388-6660 www.VaughnMelton.com



*Visit
our
website!*

www.KAPS1.com



DDS ENGINEERING, PLLC
Land Surveying • Civil and Geotechnical Engineering
Landscape Architecture • Construction Materials Testing • Precast Construction

148 Chester Court, Bowling Green, KY 42103
270-843-2247 • Fax - 270-843-9323
www.ddsengineering.com



**PRECISION
PRODUCTS**



Authorized Dealer




www.yourprecision.com

**Serving All of Kentucky With
3 Convenient Locations!**

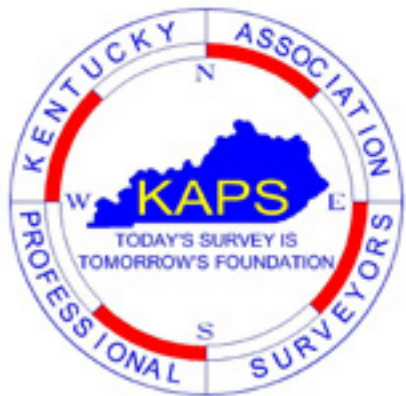
Central Kentucky:
LOUISVILLE (502) 459-1900

Eastern Kentucky:
LEXINGTON (859) 225-3477

Western Kentucky:
EVANSVILLE, IN (812) 434-9900



**We Are A Proud
Supporter of KAPS!!!**



KAPS 2013 MEMBERSHIP APPLICATION

Please complete form:
email to mforrest@kaps1.com
or fax to 502.695.2667 or mail to
KAPS - 124 Walnut Street - Frankfort, KY 40601

NAME _____ SPOUSE _____

CHAPTER _____ KY PLS # _____ LSIT # _____

RESIDENCE ADDRESS _____

CITY _____ STATE _____ ZIP _____

BUSINESS NAME & ADDRESS _____

CITY _____ STATE _____ ZIP _____

PREFERRED MAILING ADDRESS: RESIDENCE BUSINESS

PREFERRED EMAIL ADDRESS _____

BUSINESS WEBSITE _____

HOME PHONE _____ CELL PHONE _____

BUSINESS PHONE _____ FAX _____

BIRTHDAY _____ HIGHEST DEGREE _____

I HEREBY CERTIFY THE STATEMENTS MADE ON THIS APPLICATION ARE CORRECT AND THAT, IF ELECTED, I AGREE TO BE BOUND BY THE CONSTITUTION AND BY-LAWS OF THE ASSOCIATION.

SIGNATURE _____ DATE _____

CLASSIFICATION OF MEMBERSHIP

- CORPORATE MEMBER \$240.00
- FULL MEMBER \$175.00
- AFFILIATE MEMBER \$ 87.50
- ASSOCIATE MEMBER \$ 87.50
- COMPATRIOT MEMBER \$ 87.50
- SUSTAINING MEMBER \$ 87.50
- STUDENT MEMBER \$ 0.00
- FIRST LICENSED YEAR \$ 0.00

| |
|------------------------------------------------------------------------------|
| <input type="checkbox"/> CHECK ENCLOSED <input type="checkbox"/> CREDIT CARD |
| MC / VISA # _____ |
| 3-DIGIT V-CODE (on back of card) _____ |
| EXPIRATION DATE _____ |
| SIGNATURE _____ |
| REFERRED BY _____ |

100% Annual Dues January – June; 75% Annual Dues July – December (proration according to date of application)