



The Cornerpost

Journal of the Vermont Society of Land Surveyors

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- Spring19



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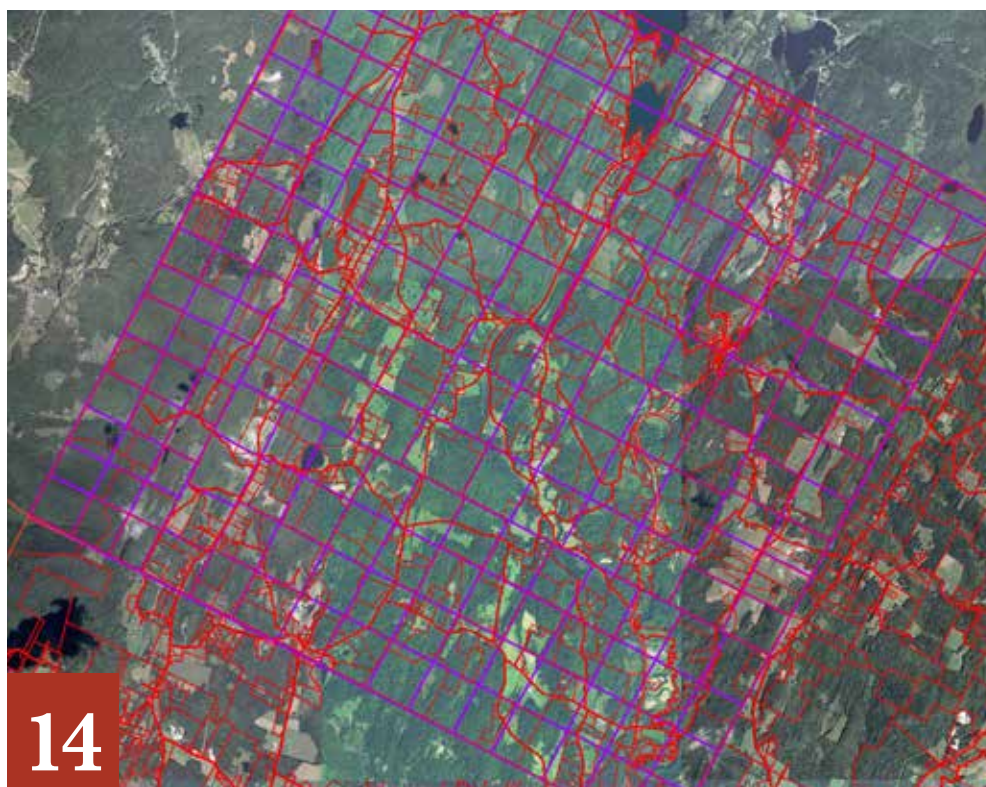
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Send In Your News

The success of *The Cornerpost* depends on all of our members. Please consider making a contribution to an upcoming issue. Send your articles, news and photos to kelly@vsls.org.

President's Corner



Breakfast, anyone?

We'd like to begin a tradition of regular "surveyors breakfasts" around Vermont. This has been a monthly custom in the Northeast Kingdom for many years, where local surveyors and techs get together to share a meal and swap stories and ideas.

If you're interested in coordinating a breakfast in your area, please send me or Kelly Collar an email. We can provide the contact information for members in your region. A quick email with a date and location is all it would take to get the ball rolling.

✉ mark.day@tcevt.com
✉ kelly@vsls.org



After taking a break from our traditional December Round Tables in 2017, I enjoyed getting back to them for our 2018 meeting. It was a well-attended meeting with some great discussions. Thanks to all who made it happen. I am sure that the Program Committee would appreciate any feedback on both the topics and the format in general.

I wanted to share a story about a project I've been working on recently, in particular how a particular land record document affected the title boundary. How many of you have come across a document in the land records titled "Order of Confirmation" and if so, do you even know what it means? On the face, it is simply a foreclosure judgment against a land owner. But, what if that land owner subdivided or adjusted the boundaries of the parcel prior to the foreclosure with all of the necessary permits and even executed a deed to a Grantee, but oops they forgot to notify their lienholder?

"How many of you have come across a document in the land records titled "Order of Confirmation," and if so, do you even know what it means?"

On the particular project I have been working on, this very thing happened. The town approved a Subdivision/ Boundary Line Adjustment, a mylar was recorded and deeds were executed and recorded. Seven years later, when the property owner was foreclosed on, so were the Grantee's of the

subdivision/adjustment, making the plat and deeds void. From a surveyor's perspective (or at least mine), I am blown away by this. Someone obviously missed something along the way. Even when the record is clear, it may not be. After this flushed out, I wondered to myself if I have ever come across something like this in the past and didn't even realize it, and even if I did would I be able to decipher the legalese of the document? The moral of the story: our job never gets any easier!

Enjoy the rest of the winter. The weather hasn't been making our job easier either. ☁

Sincerely,

Mark

MARK DAY, VSLs PRESIDENT

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VSLs Education Foundation Scholarship

APPLICATIONS
DUE ON
JUNE 1, 2019

Scholarship Recipients Over the Years

1973-74	Michael Raboin, VTC
1974-75	Paul Harrington, VTC
1975-76	No award
1976-77	William Giel, VTC
1977-78	Patrick Kirby, VTC
1978-79	Frank Lamson, VTC
1979-80	Alec Hastings, VTC
1980-81	Blake Thomsen, VTC
1981-82	Robert Snively, VTC
1982-89	No award
1989-90	Carl Beattie, Paul Smith's Jason Hatch, Paul Smith's
1990-91	Timothy Patch, UMaine at Orono
1991-92	Arjay West, Paul Smith's
1992-93	Darren Smith, N.H. Vo-Tec
1993-94	Stephen Burnham, SUNY-Alfred
1994-95	Chris Peck, Ferris State University
1995-98	No award
1999-2000	Joseph DiBernardo, Ranger School
2001-02	Michael Gervais, Paul Smith's
2002-03	No award
2004-05	Jason Leach, N.H. Technical College
2005-06	No award
2006-07	Jason Riley, Paul Smith's Andrew Paradee, UMaine at Orono
2007-08	Asa White, Paul Smith's
2008-09	No award
2009-10	Jacob Bartlett, UMaine at Orono
2010-11	No award
2011-12	Jared Serpico, UMaine at Orono
2012-13	No award
2013-14	Michael Huyler, Paul Smith's
2014-15	Lance Elithorpe, Alfred State
2015-18	No award



Brad Holden, L.S., with scholarship recipient Michael Huyler at the 2014 December Round Tables.



The VSLs Education Foundation offers a scholarship each year to a student nearing graduation from an accredited land surveying program. The goal is to support the development of talented new surveyors as they enter the profession.

Who is eligible to apply?

Vermont residents who have resided in Vermont for a minimum of two years during completion of a high school education or equivalent, and, who are in their final year and about to graduate from an educational institution offering an ABET accredited land or geodetic surveying program.

How much is the award?

\$2,000 maximum

When is the deadline?

June 1, 2019

How can a student apply?

Go to vsls.org/scholarship to learn more and to download the application form.

Unearthing the Castleton Tree Deed

With our Spring Seminar coming up on April 12 at Castleton University, one of our members thought it would be a good time to share this unlikely deed from a husband and wife in Castleton, written more than a century ago.

FELLOW PROFESSIONALS & HISTORY BUFFS,

Too many decades ago, I acquired some of the Fred E. Dwinell (L.S. #18) survey records. Fred was a friend, mentor, competitor and one of the founding fathers of our society. He had a strong opinion of legal matters and also worked as a forester for large timber companies within the four corners of Vermont and New Hampshire. He shared many stories, but I have yet to see the “moving monument” red-striped porcupine that happened along while Fred was painting a timber boundary.

Within his piles of assorted documents were two very

interesting Vermont deeds, of which I will share one now, with a tidbit of the other. There were no indications of how he found them, but he covered many towns doing research.

You will note “how times have changed” when reading the 1910 Castleton, Vermont Tree Deed. Being a fellow Columbo and student of Wilson’s “Forensic Procedures,” I took a two-hour road trip (each way) to locate the deed. And, of course, I needed to discover what happened later.

In 1910, Alfred E. and Jennie V.V. Higley, “for and in consideration of the love and affection we and all of the tribe of Higley bear unto Sarah Catherine Denison,” deeded the maple tree, land and access “either upon foot, barefoot, in stocking feet or slippers, on snow shoes or on horseback,” and now for the land, “the same for two persons of different sexes to sit upon with their backs against said tree.”

Wondering what happened later, I checked the land records and located a 1924 deed of the Valley View Farm from the Higleys to daughters Edna V.V. and Mary G. Higley. Then in 1930, Sarah Dennison (double nn this time) deeded “all and singular the same tree and grounds surrounding...also the same right of way” to Edna and Mary. As an aside, I wonder if Sarah was ever taxed for the tree, land and access. A review of the older Grand Lists should answer that question.

And to pique your interest in the second deed found in Fred’s papers, I will quote one boundary from the 1767 (that’s right ...1767) deed from an Indian tribe “from thence East five days travel accounting twenty English miles per day.” Any volunteers for an Opinion of Title or survey?

Again, finally after decades, I put pen to paper, fingers to keys, and give you the Castleton Tree Deed.

And for those of you who are into such things, Google “Athens, Georgia, The Tree That Owns Itself,” as willed by Professor William H. Jackson. 🌳

YOUR MOST HUMBLE SERVANT,
BYRON L. KIDDER, LLS



See the original Castleton Tree
Deed on pages 8 and 9.

Castleton Tree Deed, September 9, 1910

CASTLETON, VT. BOOK 29, PAGES 412-413
8-22-1910

Know all men by these presents;

That we, Alfred E. Higley and Jennie V.V. Higley, husband and wife, of Castleton, in the County of Rutland and State of Vermont, for and in consideration of the Love and Affection we and all of the tribe of Higley bear unto Sarah Catherine Dinison, of Harris, British Columbia, and for other good and valuable considerations received to our full satisfaction of the said Sarah Catherine, have granted, bargained and sold unto the said Sarah Catherine Dinison, and do by these presents grant, bargain, sell, alien, confirm, convey and make over unto her the said Sarah Catherine, her heirs and assigns,

One first growth maple tree standing and growing, and being located at a point on the hill side in Castleton aforesaid, distant $378\frac{1}{2}$ feet south westerly from the south west corner of the "Valley View" farm of Edward A. Ellis and $190\frac{1}{2}$ feet south easterly from a well or spring of water beside a woodroad, together with all its roots and branches and sap and the right of access to the same from the public highway known as "Main Street" in the village of said Castleton, either upon foot, barefoot, in stocking feet or slippers, on snow shoes or on horseback as she may

elect or the spirit may thereto more let
and also sufficient of the land beneath its
branches and around the same for two per-
sons of different sexes to sit upon with their
backs against said tree, and the right
to have said tree there remain so long
as it pleaseth her the said Sarah Catherine

To have and to hold the said tree with
all the rights, privileges and appurtenances
hereinbefore enumerated, unto her the
said Sarah Catherine her heirs and
assigns so long as said tree shall stand.

In witness Whereof we have here-
unto set our hands and seals this 22nd day of
August, A.D. 1910

Signed, sealed and delivered
in presence of
Henry L. Clark
William C. Rice

A. E. Higley, L.S.

Jimmie Van Dleet Higley

State of Vermont

Rutland County

Be it remembered that at
Castleton in said County and State on this 22nd
day of August, A.D. 1910 personally appeared
Alfred E. Higley and Jimmie V. U. Higley, signers
and sealers of the foregoing instrument, and
acknowledged the same to be their free act and

Before me, Henry L. Clark Notary Public &
Recorded for record Sept. 9th 1910 at 8 o'clock P.M.
and here recorded - A true record

Attest Henry L. Clark Town Clerk

A Tale of Construction Encroachment

Incident in St. Johnsbury underscores the need for a boundary survey before construction

BY ANDREW DUSSAULT, L.S.

Most of us have heard, or read, over the years, of the nonsensical prices that our federal government pays for items, such as \$100 for a \$2.98 hammer, \$600 for a toilet seat, or a \$3,000 coffee maker. (see: www.scraggled.com)

How do these kind of decisions enter into other bureaucratic departments of our federal system? Is it because of ignorance, malfeasance, etc.? I do not know.

One of the most memorable projects of my land surveying career occurred in 1981, and the principals involved were partners Earl Eldridge, Pete Ruggles and Earl's son, Kim Eldridge *and* the U.S. Small Business Administration.

On April 26, 1974, Pete and Gloria Ruggles were conveyed a house and garage at #155 Railroad Street, which has 91.00 feet of frontage.

On Dec. 15, 1976, Pete and Earl were conveyed the land and premises at #157 Railroad Street, which has 49.5 feet of frontage. A permit had been issued to Scotti Muffler Center for a repair facility on June 2, 1976.

On April 19, 1978, Pete and Gloria conveyed their house and garage at #155 Railroad Street to Kim Eldridge and Terri Colby.

Pete and Earl conveyed, on July 24, 1978, to One Scotti Place, the property known as Scotti Muffler Center at #157 Railroad Street.

A mortgage deed was tendered to the Citizens Savings Bank by Pete and Earl for the property at #157 on December 15, 1976 and subsequently discharged on August 7, 1978.

During the construction of the new building at #157 Railroad Street, the slope on the northerly side of #155 Railroad Street was lowered to the level of the land at #157 Railroad

Street to allow for a more suitable site on the southerly side of #157.

So, time continues to move on. For whatever reason, a reason I'm not privy to, the president of One Scotti Place, Inc., a Vermont Corporation, Kim Eldridge rendered a quit claim deed for the land and premises to the U. S. Small Business Administration on May 22, 1981. It immediately became apparent to the researching attorney involved that, "Nothing in the Town Land Records indicates whether or not the building located at 157 Railroad Street is located on the described premises. A cursory review of the property would indicate that said building is located extremely close to the line bordering Eldridge's property at 155 Railroad Street."

Along comes Oct. 8, 1981 and Truline Surveyors received the following comments. "As we discussed this morning, SBA is now the proud owner of the above-captioned premises located on Railroad Street in St. Johnsbury. We attempted to auction the real estate earlier this year, only to have the successful bidder back out of the sale because of the claim by the southerly adjoining owner that he owned the front portion of the lot. This claim, and surrounding rumor, have continued to make title to the property less than marketable, and for that reason we would like you to perform a survey of the property so that we may prove or disprove the adjoining land owner's claim.

"At this point, it seems that every attorney in Caledonia County has had a shot at doing a title search on this land."

By the end of October, all of the functions required to determine property corners and prepare a plat had been completed. On November 11, 1981, Hal (Bob Hallas) and I set the necessary monuments to delineate the property on the ground. The final plat was mailed out on December 1, 1981. The monuments set included a tack in the floor of

the building at point "B". (See plat) Fortunately, our line of sight from the traverse point occupied went through the door opening in that area of the building. Following our computations, and the setting of the tack at "B", it was obvious that the building was encroaching onto the property (house and garage) at #155 owned by Kim and Terri Eldridge, and that is why the successful bidder – mentioned in the last quote – backed out of the possible transaction.

During the middle months of 1982, deeds started "flying" around.

On April 16, 1982, Kim and Terri deeded #155 Railroad Street to The Howard Bank.

U.S. SBA conveyed #157 Railroad Street to James and Lorraine Impey on June 9, 1982.

On July 20, 1982: the Howard Bank exchanged quit claim deeds with the new owners of #157 (the Impeys) to establish a new boundary from "A" to "B" to "C", which eliminated the encroachment by the building at #157.

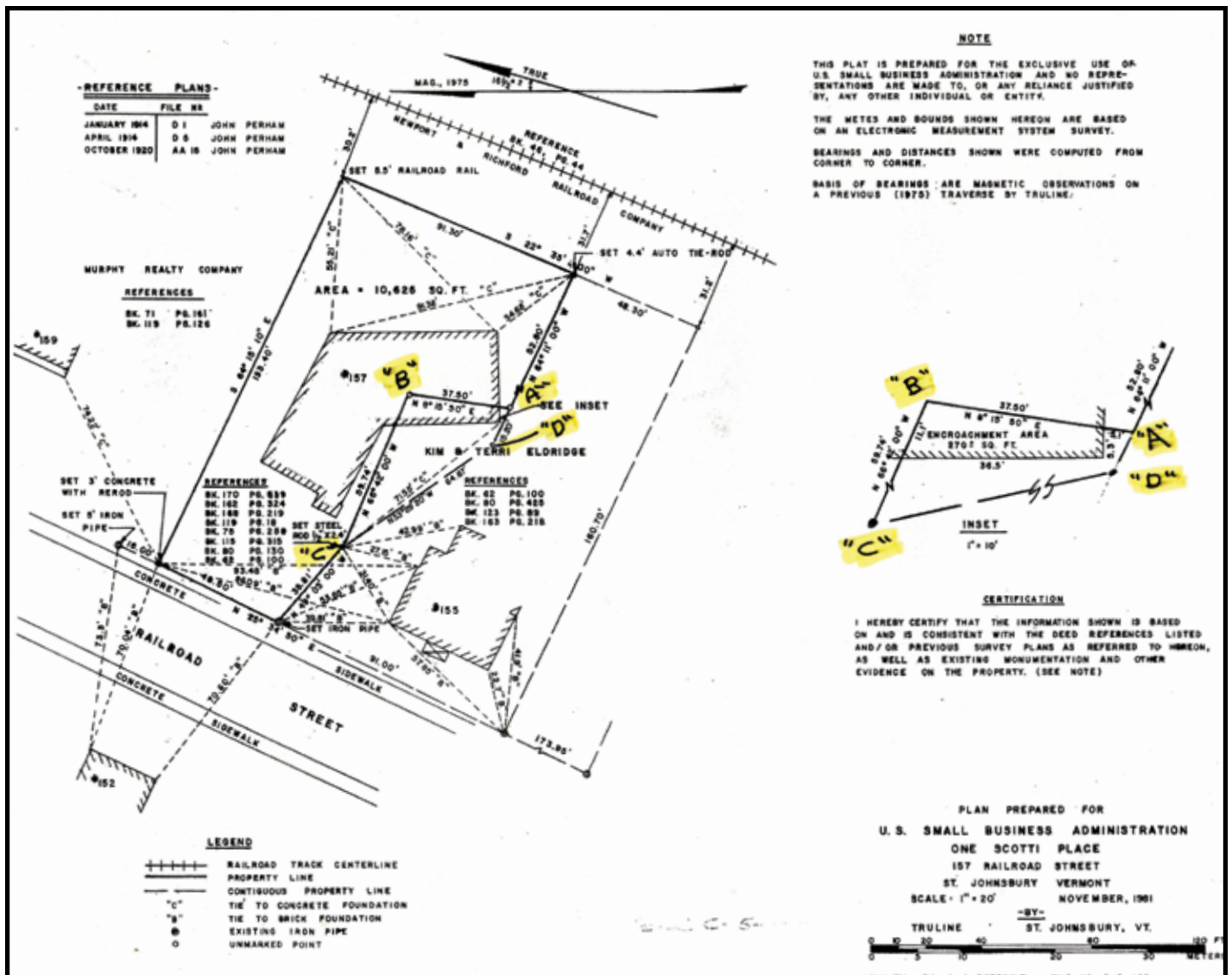
The Howard Bank deeded #155 Railroad Street to James and Lorraine Impey.

Now, one party owned both parcels and, since then, the house and garage at #155 Railroad Street have been removed.

In a recent discussion with the Impeys, who purchased the two parcels, they said that they received a very favorable deal.

Over all these years since, I've thought about how the encroachment could have been avoided if the institutions/boards involved would have required a boundary survey prior to construction. Such as, the lenders, the zoning administrator, the planning commission, etc.

I'm reminded of the old adage about locking the barn door after the horse has already left. 🐾



“Over all these years since, I’ve thought about how the encroachment could have been avoided if the institutions/boards involved would have required a boundary survey prior to construction.”



From the Archives

Guest Article

{ reprinted from the Fall 1970 Issue of The Cornerpost }

What does the word ETHICS denote? One dictionary defines it as a discipline dealing with “good and bad” and “moral duty and obligation.” To be ethical is said to be conforming to accepted professional standards. It was recently pointed out that using a paper clip belonging to your employer for personal use is just as dishonest or unethical as using a dollar bill. Personalities enter into how a man’s conscience reacts to little things or big things.

Using a published code of ethics as background, a general code which will fit any profession is suggested. I am sure each of us might write the same subject in slightly different language, but basically with the same philosophy.

General

1. A professional person will utilize his knowledge and skill for the benefit of society.
2. He will advertise in a truthful manner what services he stands ready to render.

Relations with the public

3. He will strive for correct and increasing knowledge in his profession and will condemn dissemination of untried and exaggerated knowledge by others.
4. He will not criticize public policy without declaring for whom he is acting.
5. He will render expert witness statements based upon adequate knowledge and his own honest convictions.
6. He will refrain from expressing publicly opinions not based upon facts relating thereto and will not withhold or distort complete data relating thereto.

Relations with client or employer

7. He will be loyal and faithfully perform his work assignments.
8. He will present clearly the consequences which will develop if his professional judgment is overruled by non-technical people where he has a responsibility for technical adequacy.
9. He will not disclose business information of client or employer without express permission from them.



10. He will not have other business interests which might influence his professional judgment without giving his employer full knowledge of such business.
11. He will not accept compensation for the same service from anyone but his client unless all parties concerned are fully advised and their consent given.
12. He will consult with other professionals whenever his client's or employer's interests may best be served, and cooperate fully with such consultant.

Relations with other professionals

13. He will strive to protect his profession collectively and individually from misrepresentation and misunderstanding.
14. He will safeguard his profession against admission of poor moral character or inadequate training.
15. He will give full credit to others in speech writing, so far as his knowledge goes, for new ideas, devices or discoveries.
16. He will not intentionally, directly or indirectly, injure the reputation or business of another, without just cause.
17. If he has a substantial knowledge and evidence of unprofessional conduct, he should report same to proper authority.
18. He will not compete with another professional by underbidding after he has knowledge of competing bid.
19. He will not use a salaried position to compete unfairly with another professional.
20. He will not attempt to supplant another if he has knowledge of another's engagement.
21. He will not review the work of another without his knowledge unless he has terminated his professional services connected with the work being reviewed.
22. He will base written or oral recommendations on honest and unbiased evaluation of the professional concerned.
23. He will support the merit system of employment.
24. He will not solicit financial support for political reason from subordinates or employees.
25. He will uphold a principle of adequate compensation for all grades of employees as being in the public interest and maintaining the standards of the profession.

So could this be more simply stated? Yes. "Do unto others as you would have them do unto you."

Free QGIS Software Offers Great Features and Functionality

BY PAUL HANNAN, L.S.



“I really felt like I’d arrived (on the cheap) when I learned about QGIS – a downloadable, free software program that has *way* more features than I’ll ever use or understand, but which is fairly user-friendly once you have a basic understanding of the principles involved in layered geographical data programs.”

Not so many years ago, I would hear colleagues at meetings disparage GIS as somehow either inferior to or usurping the work of land surveyors. You’ve heard the remark, no doubt: “Ya know what GIS stands for, don’t ya? Git It Surveyed!” – usually uttered with maximum disdain and maybe even a sneer on the utterer’s lips. (Of course it actually stands for Geographic Information System – but you knew that.)

I may be among the least “turf conscious” of land surveyors, but somehow I never felt threatened by the mere existence of a tool like GIS. In fact, the only intimidation I felt was how the heck to climb the GIS learning curve. Well, and then there was: “how the heck do I justify the not-insignificant expense of an ESRI ‘Arc’ product as a one-person operation without a lot of discretionary cash lying around?”

At one point someone gave me a free GIS software program that had been developed by the Wisconsin Department of Natural Resources. But I really felt like I’d arrived (on the cheap) when I learned about QGIS – a downloadable, free software program that has *way* more features than I’ll ever use or understand, but which is fairly user-friendly once you have a basic understanding of the principles involved in layered geographical data programs. Particularly as a reconnaissance tool, now I can’t imagine starting a new survey without zeroing in on the property and its neighbors on GIS first.

I have no intention of trying to convey all the steps needed to produce the photos you see gracing this article; I merely want to show the product and particularly how the relatively new resource of Lidar imagery can help with what I’ll call

“pre-reconnaissance.” I hasten to add that we in Vermont may be unique or certainly in an elite group of states because of the Vermont Center for Geographic Information (VCGI.) Most of the components you see in these photos were downloaded from VCGI’s website – and did I say *for free*?

The images in these photos illustrate a typical exercise that I routinely engage in when confronted with working in a new town and when tasked with a retracement back to original lotting plan boundaries – that describes most of the projects I work on. I begin by laying down ortho photos as a base map covering either the entire town or a large enough portion of the town such that I capture as much as I can of the town’s original lot division in which I’m working. I then layer on the town’s parcel data layer – the tax map if you will. (A bit like GIS, we all poke fun at the error-laden tax maps, but they sure are a handy place to start cyphering out boundaries. I like to say “if tax maps were perfect I’d be out of a job, but I sure do like having them.”) Particularly in a town that hasn’t lost its agricultural heritage, by having both photo evidence and tax map lines, one can zoom out and begin to see the pattern of the original lotting plan emerge.

1008-61



Figure 1 shows the original lotting plan of the Town of Elmore. If the 19th Century survey of those lots were more reliable, one could just take that plan and overlay it on the town and be off to the races. Anyone who's worked in Elmore (or most Vermont towns for that matter) knows that the nice neat checkerboard pattern on the lotting plan isn't what ended up being surveyed and occupied for the last 200 years.



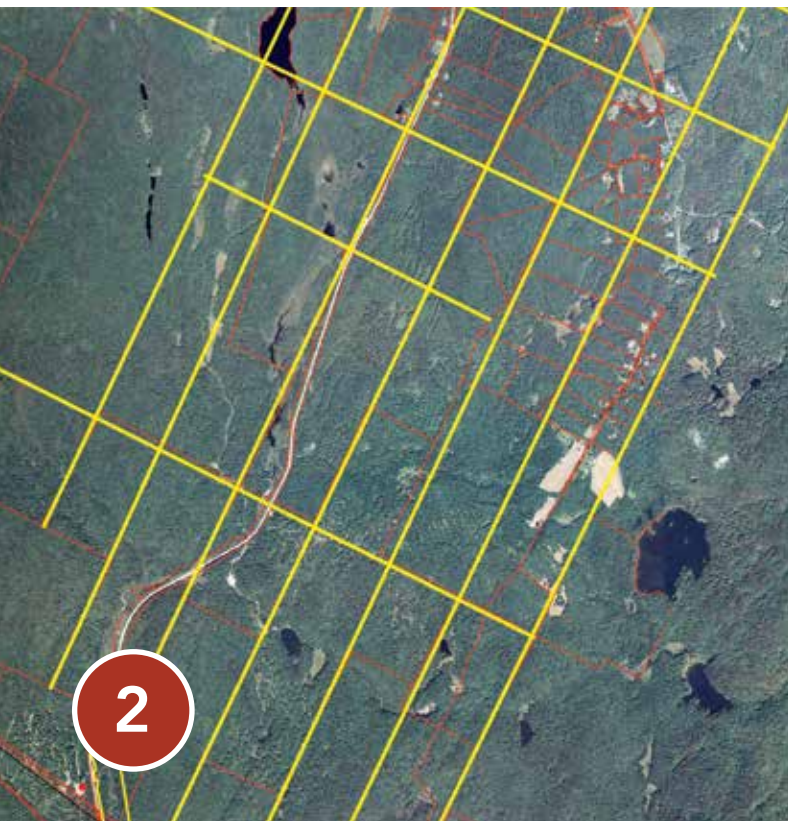


Figure 2 shows the results of my iterative process of laying in the lot lines based on that emerging pattern shown via tax map lines, edges of fields, differing timber types, lines of larger crowned trees and the like. The yellow lines are actually a data layer, known as a “shape file,” that I created in QGIS to visualize the lotting plan in the landscape of today.

As you can imagine, in a more heavily forested town it can be a real challenge if the photos show a homogenous texture to the tree canopy across a wide area. **Figure 3** shows the particular area I was working in and, for sure, there was not much to go on in that immediate vicinity as far as photo-visible lot line evidence. Nonetheless, because I had created the yellow lines shown on Figure 2 based on parts of town that did show good lot line evidence, then zooming in to those yellow lines on **Figure 4** felt like I should be pretty close.

A brief but important digression: GIS layers – photos, parcel data, and other shape files – can be loaded into most if not all “resource” grade GPS units and then used to navigate to those lines on the ground to seek evidence. No more compass and pacing, no more hip chain string to get tangled in.

Frustrated that I didn’t have better visual lot line evidence in the immediate vicinity of my work, it suddenly dawned on me that maybe the LIDAR imagery might have something to offer. I’ve attended seminar sessions on Lidar but won’t pretend to be conversant in how it’s created. However VCGI publishes a product called “Hillshade” whereby the tree canopy is pierced to expose, in remarkable detail, the underlying topography.

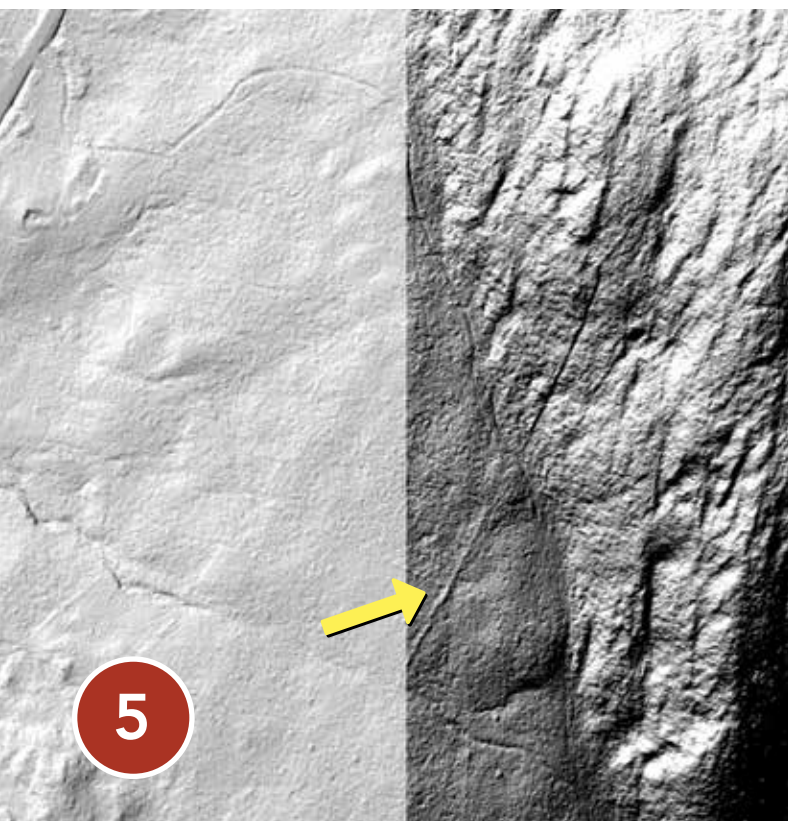


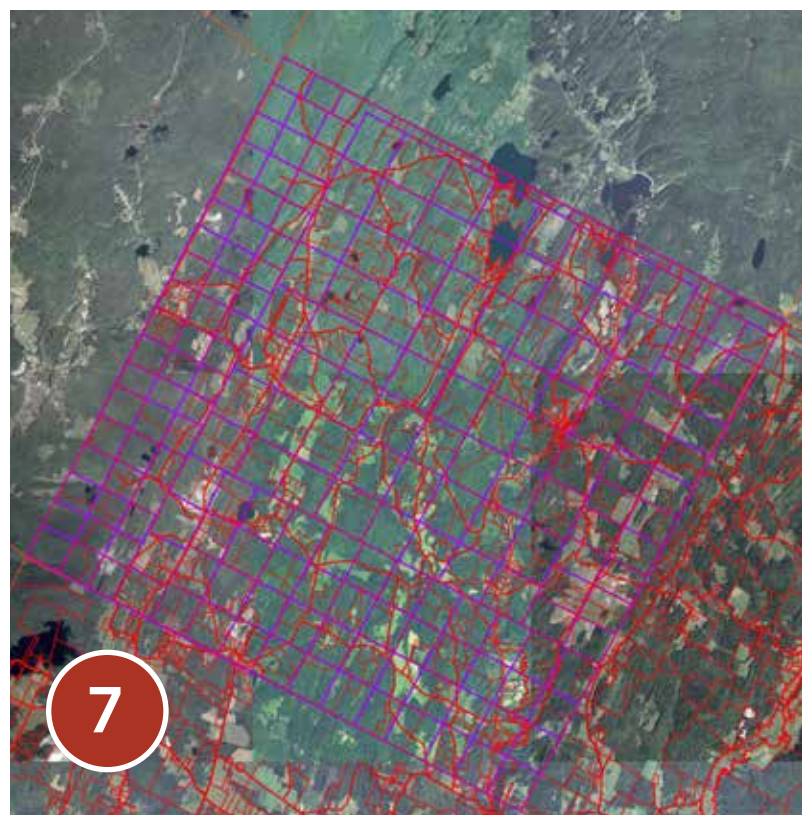
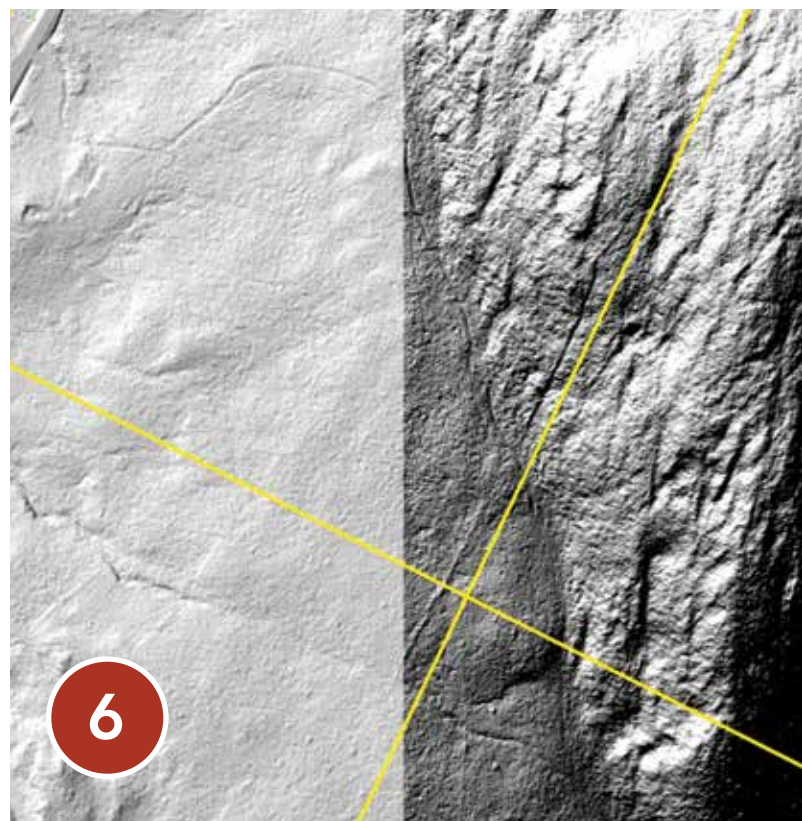
Figure 5 shows the same area as Figures 3 and 4 in the Hillshade Lidar image. (It's where two tiles join, hence the differing levels of contrast.) If you look more or less mid-image and just to the east of the contrast line, you will see my “eureka” moment – a nice right angle intersection of two texture changes that clearly indicate old boundary lines, most likely stone walls and/or hedge rows. The difference between how obvious those lines are in Figure 5 versus the painful homogeneity in Figure 3 was palpable.

If you move on to **Figure 6** you'll see that I had the northwest/southeast running lot line laid in pretty well; you can't even see the boundary imagery because the yellow line covers it. But you can also see that I was a little off on the northeast/southwest running lot line and need to move it to the northwest.

I may be easily amused, but I just about jumped up and down at what this revealed the first time I looked at it. That said, by no means have I abandoned ortho photos as co-equal partners with Lidar in this pre-reconnaissance work. I have another project in Irasburg where the Lidar revealed absolutely nothing while an obvious line of taller trees leapt off the screen out of the forested canopy in the ortho photo. I guess it's like fishing rods, golf clubs or shotguns – you need the right one for the situation you're in.

In case you're wondering, I have not yet been out on the ground to see what the textured line on the Lidar translated to on the ground, but it's just too obvious to be anything other than a line of occupation over time. And I'll find it pretty easily by loading my photos and shape files into my resource grade GPS.

GIS – how about Glad I Started. If you haven't already, you should, too. 🌿



As a final example, **Figure 7** is my town, Calais, which I've fussed with over the years and gotten the lotting plan pretty well created.

Measuring Angles & Directions

BY KNUD E. HERMANSEN, P.L.S., P.E., PH.D., ESQ.

I'VE BEEN SURVEYING for around half a century. When I started surveying, the equipment used was little different from the equipment used by surveyors for over 200 years. In fact, many surveyors used the equipment left to them by their grandfathers and fathers. In these present times, I believe most surveyors replace their equipment every ten years or less.

This is the second article on surveying equipment and procedures that are now relegated to history. I believe I am the last generation of surveyors to have practiced the profession using what is now historical equipment and procedures. I believe it helpful for the modern surveyor, when retracing boundaries, to know what the previous surveyor used. Perhaps it will provide a better explanation for the precision of the record measurements and how far to look "afield" for the monuments after applying the record measurements to the site.

I will say that my first experience measuring directions and angles was as a Marine with the 2nd Topographic Platoon. We used Wild T-2s and even T-3s most of the time. Occasionally, we had to use Wild T16s or transits when doing some construction layout. Once I departed from the Marines and went into private practice, my employers mostly used compasses and transits. One employer did have a theodolite.

Wild T-2s and T-3s were very rare among private surveyors so I will not take up much space on paper discussing these remarkable instruments. The T-2s could measure an angle to the nearest second of arc using a micrometer. The T-3 could measure to the nearest tenth of a second of arc. With the T-3s I have sighted targets almost 30 miles distant. While the T-2s had optical plummets, the T-3s that we used did not. The

T-3s required a plumb bob suspended under the instrument in order to put the instrument over the control station. Many of these instruments had an inverted image. What I mean is that the object viewed was upside down when looking through the scope optics. Setting the zero on the instrument required some finesse that I will not describe for the reason I have previously stated.

The common instrument to measure angles and directions at the time I began surveying in private practice was the transit. All surveyors, even the modern surveyor, has probably seen a transit - usually on the table at the historical equipment booth found at the annual professional meeting. Transits can be very handsome with their shined brass or the black and brass contrast.

I did use the compass often, though not the large compass employed by Washington, Lincoln, Jefferson and the

other surveyors in the 1700 and 1800s. The compass I employed in years past was a smaller version compass. They were known as the Sipe's compass named after F. Henry Sipe. Henry was licensed surveyor #1 in West Virginia. He was a fine gentlemen that I had the pleasure to know and had many conversations with before his departure from the living.

The compass was used during my early years to perform a reconnaissance to set up the boundary survey and look for evidence in the field. At the time it was thought the best way to follow in the footsteps of the original surveyor is to use the equipment employed by the original surveyor. I still think this to be true but time constraints of the modern survey practice have curtailed or eliminated much of the reconnaissance practiced in the past using the compass. Of course, using a compass for reconnaissance work was often coupled with a tape that was dragged along making no effort to correct for slope and such. I suppose many of the original surveyors did not concern themselves with slope corrections either. It is through this effort that original corner monuments were found along with old blazes and wire remnants on the ground and in trees. Resting stones for split rail fences could often be found by the diligent surveyor. These objects and discoveries were all marked for inclusion in the traverse that followed the reconnaissance.

The compass I used was mounted on a wooden pole known as a Jacob's staff. The end of the pole was metal. This end



My first experience measuring directions and angles was as a Marine with the 2nd Topographic Platoon. We used Wild T-2s and even T-3s most of the time.

was pushed into the ground. The vanes or pointing columns of the compass were raised to reveal the face of the compass. The top of the Jacob's staff was swayed until the bubbles on the compass indicated the compass was level. At this point the needle was released to float and point toward the magnetic north or the machete, tape, pocket pen, or other metal held too close to the compass needle as so often occurred.

Speaking of local attractions to the compass needle, I will state that more than a few times, I used the compass to locate a buried pin under the ground by slowly moving the compass across the ground surface and looking for a twitch in the compass needle. I will remind my younger colleagues that metal detectors were not available when I first began practicing surveying. I will elucidate in some later article on the dip needle that preceded the metal detector.

Having released the compass needle from its mechanical constraints, the surveyor would wait for the needle to settle down. The compass needle was a contrary pointer much like a five year old with too much energy. I often voiced my thoughts to the needle in order to hurry the needle toward a decision. The needle always ignored my advice.

Once the needle decided to rest without skittering, the compass could then be rotated to read the bearing that was desired. At some point during a survey-apprentice's first acquaintance with a surveyor's compass the user realizes that east and west are reversed on the face of the compass - the east mark being to the left of north and west being to the right of north. This is not a design flaw. This allows the compass reading to be made directly off the pointing of the compass. I suppose I can try to explain how this works but I believe an explanation would be better understood if left to the person that is at the historical survey equipment display to explain this layout by actually showing the results using an actual compass.

The direction was then set on the compass. The vanes of the compass were sighted through in order to spy some object to align with and the measurements made with the tape to reach the object selected. Once the far object was reached, the compass was



The compass I used was mounted on a wooden pole known as a Jacob's staff. The end of the pole was metal. This end was pushed into the ground. The vanes or pointing columns of the compass were raised to reveal the face of the compass.

uprooted from the ground and the surveyor headed for the object to repeat the process. Woe be to the compass operator who did not collapse the vanes and did not fasten down the needle or brake the needle before uprooting the compass. Failure to fasten the needle would cause the pivot or spindle to be bent and the compass to err in its next pointing or perhaps not to point at all.

It is my experience and observation to state that the very best compass could measure the arc to the nearest quarter of a degree. The compass I used for reconnaissance would measure to the nearest degree. I will speak no more on the vagrancies of the compass and the magnetic needle since those probably deserve their own article. It is worth mentioning that many compasses had a personality of their own such that two compasses placed over the same point and pointed toward the same object could vary in their direction by as much as a degree or so. In early texts explaining the subject of surveying with the compass, the surveyor was cautioned to know the temperament of their compass. Many states had laws requiring the surveyor to set their compass over a designated stone and point to another stone in order to check the peculiarity of their compass.



WORTHPOINT.COM

Switching to the transit, I must first introduce the tripod the transit set upon. It was wooden, made from heavy wood such as oak. The legs of the transit tripod could not be adjusted in length. It was using great skill that a transit was placed over a point upon a hillside and still be leveled. The fastening ring for the transit upon the tripod was large and often as not gave me some difficulty in getting the threads to start. My difficulty oftentimes being caused by the small chain and hook that hung from the bottom of the transit upon which the plumb bob was hung. It seems this chain was always in the way of the thread when first placing the transit upon the tripod.

Without adjustable legs, a good deal of pushing and prodding of the legs into the ground took place in order to position the suspended plumb bob over the point. Having been a Marine, a few cuss words were used as well to gain some cooperation from the tripod legs. Numerous minutes of time were lost during the work day on this endeavor. A little grace was provided in this procedure by loosening one leveling screw in each of the two directions thereby allowing the transit to be shifted around an inch or so without wrestling with the tripod.

Having positioned the transit over

the point, the next task was to level the transit. Some of the last transits commercially produced had three leveling screws but the ones I used had four leveling screws. Great care had to be exerted to balance opposing screws during the process of leveling the transit. Failure to exert the care required would leave one screw too loose resulting in the instrument wobbling along the axis. Too tight and there was a torque introduced or the brass threads were stripped. As I was often told, the screws had to be snug when the leveling process was complete. The transits I used had two plate bubbles, their axis perpendicular to the other, revealing the level of the transit in perpendicular directions.


Once the transit was leveled, the instrument plates had to be set to zero. This involved releasing the upper and lower motions of the transit and spinning the plate around using the fingers until a zero was approximately reached on the plates. The upper motion was then locked and the upper slow motion used to set the zero to a tolerance possible with the instrument. The lower motion remained loose until the instrument was sighted on the backsight target. The lower motion was used to put the cross-hairs on the target since the lower motion did not affect the reading on the plates.

In mentioning the upper and lower motions, I have introduced a common mechanism that has disappeared from the modern instrument that I do not wish to explore to a great extent. Both the upper motion and lower motion had a release knob and a slow motion knob. Both knobs control the horizontal rotation of the transit. The lower knobs would do so without changing the reading on the plates. The upper knobs would change the reading of the plates. The lower knobs were used to point to a target without changing the angle reading. No one who used the transit can say they did not use the wrong knob from time to time. The problem arises because the person is looking through the optics while wishing to move the cross-hairs on to the target. Their hands grasp for a knob while they look through the scope. Of course either slow-motion knob will move the scope. The mistake is realized when they have aligned the cross-hairs on the target and look at the plates. The

mistake is usually discovered at this time and some cuss words often escaped from the lips. This mistake always seemed to occur when attempting to double the angle, requiring the instrument operator to begin the tedious process of measuring the angle all over again.

The angle on the transit was read using one of two windows found around the ring of the transit; these were known as the A Vernier and the B Vernier. The windows were 180 degrees opposite or should be if the instrument was in good temper – the letters A or B being found in the window at the Vernier scale. Looking into the window, two rings of etched lines and numbers could be viewed. There was an inner ring and outer ring. The outer ring was the Vernier.

I will avoid attempting to describe the process of reading the transit plates and Vernier. I do not believe I could do the process any justice unless the reader was looking in the window of the transit while an explanation is made. The process involved remembering in which direction the instrument is rotated and finding where a line on the inner plate coincides with a line on the outer plate. Lines and spaces are counted. The reading from the inner plate is added to the outer plate to arrive at an angle. The lines and spaces had different values depending on the 'least count' of the instrument.



If a surveyor spent their entire career reading the transit, I expect one eye would be bigger than the other eye given the strain on the eye spent finding a coincident line between the primary and Vernier plates.

Even in my younger days when my eyes were in the peak of fitness, I often employed the magnifying glass that was tied by a string to the transit standard.

One employer was very proud of the

fact his transit could read to the nearest 15 seconds. I think it is easier to follow a spider's tracks than determine which of the numerous lines on a 15 second transit coincides. Needless to say the effort spent obtaining an angle took considerably more time than current practice with modern instruments.

Many modern instruments won't give a reading if the instrument isn't leveled. I can say without hesitation, from numerous testings that I have partaken, that there was no impediment in reading a transit that was not level. I will not admit to making that mistake but I have observed numerous instrument persons do so.

I should also mention that the transits I used had a compass within the center of the transit that could be very helpful when retracing old boundaries or giving a magnetic direction to start a traverse.

I will close my reminiscence about the transit by saying it also had a direct and Vernier plate allowing the instrument to read a vertical angle. For the surveyor that wished to use their transit as a level, there was a large plate level parallel with the scope. Once this was leveled, the scope was level, assuming there was no instrument deficiency.

I wish to point out that contrary to measuring a zenith angle, the vertical angle required the instrument operator to include a plus or minus sign to be associated with the angle. The sign would indicate if the scope was pointing up (+) or down (-) from the horizontal when the vertical angle was read.

I remember expressing my surprise to a survey crew chief after he returned from a topographic survey. My surprise came about when I presumed that he had managed to find the lowest spot to set up the instrument on that particular day since every vertical angle that was recorded in the field book was positive. Unfortunately, the instrument was not at the lowest spot. It was a day wasted since his memory was not sufficient to differentiate the negative angles from the entire list of positive angles that were recorded in the field book.

I will close this reminiscence without delving into procedures that were employed to double the angle that should have been done but was often omitted in an effort to hurry the completion of the survey. 🕒

Vocational School Built Thriving Partnership with Truline Surveying

St. Johnsbury Trade School
launched many promising careers

BY ANDREW DUSSAULT, L.S.

The first vocational trade school in Vermont had a unique relationship with employers in the St. Johnsbury area during its existence from 1918 to 1970.

Depending on the school day schedule, students were allowed to work in industry during their shop time if the job was related to their chosen shop, i.e. an auto shop student working for a dealership, a wood shop student working for a carpenter, etc.

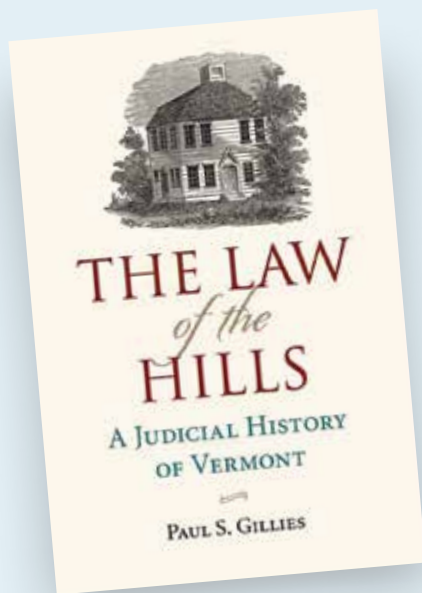
Starting in the early 1950s, Richard Bohlen, a licensed surveyor and professional engineer at Truline Surveyors, would have at least one student working with him each week who was taking drafting as a shop. At that time the St. Johnsbury Trade School schedule for a student was one week in class and the next week in shop. Consequently, we had sections A and B. So Dick would hire one student from each section, who would alternate weeks of employment during the school calendar year and usually have full-time employment during the summer and other vacations. We should note that many of the students stayed on with Truline after graduation, for varying amounts of time.

Eventually, all of the students pictured here went on to other careers. Bob Hovey was a draftsman for a local manufacturing firm; Jim Forbes went on to various major construction firms as a construction field engineer; Dave Drummond worked in the food service industry and, at one time, owned his own restaurant; Jack Perry created and operated his own construction firm; and Pete Gagner spent his career in the machine tool industry. 🌱



A 1958 photograph of "The Crew," the group of students who worked for Dick Bohlen, L.S./P.E. Below are their names and years of graduation from St. Johnsbury Trade School.

Back row, from left: Pete Gagner ('60), Jack Perry ('60), Dick Bohlen, P.E./L.S., and Dave Drummond ('58). Front row, from left: Jim Forbes ('54) and Bob Hovey ('52).



Gillies Publishes New Book

HONORARY VLS MEMBER and long-time friend Paul Gillies recently released a book, “The Law of the Hills: A Judicial History of Vermont.” This is the first general history of the Vermont Supreme Court and judicial system.

The history of the courts is, as Paul writes, “the history of Vermont in microcosm—making do with what you have, then gradually slipping into the mainstream of culture and thought that comes from other places, while steadfastly holding onto fundamental principles where you can.”

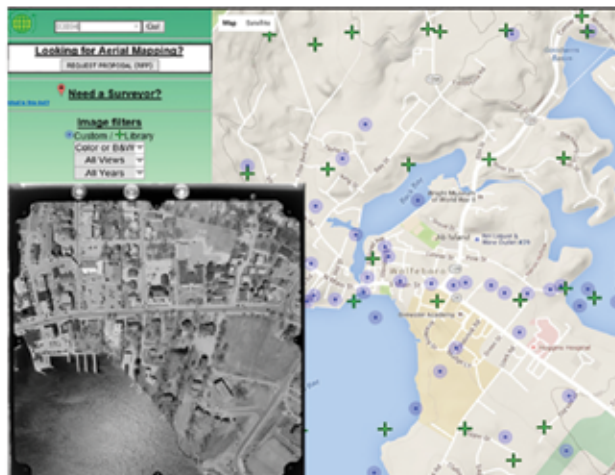
The Law of the Hills includes chapters on the judiciary, the courthouses, the New York courts before Vermont declared its independence, leading events and cases from the 241 years Vermont has existed, and a biographical appendix with sketches and portraits of the 134 men and women who served on the highest court.

The book is available through the Vermont Historical Society website. Go to vermonthistory.org and search for “VHS Book List.”

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November 15, 2018 • 6 p.m. • AIV Building, Montpelier

This meeting was called to order at 6:03 P.M. In attendance were Mark Day, Nate Yager, Lisa Ginett, Keith Van Iderstine, Gayle Burchard, Becky Gilson, Paul Hannan and our Administrator, Kelly Collar. Also attending was Tim Cowan, who spoke to us about the Vermont Board of Land Surveyors' cases regarding parol evidence.

PAROL EVIDENCE

Tim had written an article for the last "Cornerpost" regarding parol evidence. When he began to research for a general article on the subject, he ran across two cases dealing with parol evidence in the records of the Vermont Board of Land Surveyors' case work. The Board rulings on these cases baffled Tim and caused him to narrow the article to discuss the Board issues. In both cases it seemed to the group that findings in the two Stipulation and Consent Orders were inconsistent with the Rules themselves. After much discussion and concern by the group, we resolved that Tim might turn his article into a letter, or Mark might write a letter and attach Tim's article, and direct it to the Board of Land Surveyors asking to allow one or more members of the VSLS Executive Committee to attend one of their scheduled meetings to discuss the issue.

SECRETARY'S MINUTES

Minutes for the Executive Committee meeting dated October 18, 2018 were reviewed. Two revisions were made in the paragraph under the heading of David Fox VCGL. Upon motion duly made and seconded, with the suggested revisions, it was unanimously RESOLVED: to approve the minutes of the October 18, 2018 Executive Committee meeting.

TREASURER'S REPORT

Treasurer's report for the period of Jan 1st to November 13th 2018. Total income for the period is \$ 50,488.76. Total expenses were \$ 52,072.97 for a Net Income of \$ -1,584.21. Bank Account Total = \$ 54,088.58. Keith mentioned that once we had the income for our Round Table meeting, he expects that we should more or less break even.

ADMINISTRATOR'S REPORT

Kelly plans to send "The Cornerpost" to the printer tomorrow. The group had an email version to review prior to the meeting. She will correct the October 18 minutes to reflect the revisions made tonight and has added the brief Fall Seminar minutes. The Round Table meeting is only 3 weeks away and will take place the Capitol Plaza in Montpelier on Friday December 7. There has been a change in the afternoon session. Originally there was to be a one hour talk on the VT CORS Network. The discussion will now be about the VT Spatial Data Hub. Instead there will be a round table for the VT CORS network.

Kelly informs us that the Spring Seminar will take place on Friday April 12, 2019 at Castleton University and that Dan

Martin will be doing a presentation for half of the day. The other half is not yet filled in.

Kelly received a call from Leroy Carlson's wife Joan, who found more of his records and wants to donate them to the Society. It was suggested that we take them and look through them to see what is worth keeping.

Tim mentioned how helpful Kelly's fabulous graphics were regarding the requested dues raise and thought that they should be put into a hand out for the December meeting.

OTHER BUSINESS

We still need to get the hard drive containing the map scans from Brad. A brief discussion ensued as to where the hard drive should go. It was suggested that a vote be taken, a motion was made and seconded RESOLVED: that Mark Day go to Brad's and pick up one of the hard drives.

Gayle brought in a plat for us to review. It had been recorded within the past several weeks by the Town of Stowe Town Clerk even though it is an old paper copy which had been drafted by Richard Spear (long deceased). The plat was recorded in its original format at the time of the survey. It appears that the owner of the property was told by the Stowe DRB that he had to submit a plan for his development, and he took a paper copy of the Spear plat (stamped and signed) and added his data. The Stowe Town Clerk stated that she had to file anything as requested, but it is surprising to the Executive Committee that the DRB will accept the plat as meeting its requirements for subdivision. The group recommended that Gayle comment to the Stowe Zoning Administrator about our discussion.

The group authorized that Kelly make out certificates of appreciation as well as purchase small gifts to acknowledge Pete Chase, Norm Smith and Mike Raboins' long service on the VSLS Education Foundation.

There being no other business the meeting was adjourned at 7:22 PM. The next meeting will take place with the membership at the Round Table meeting at the Capitol Plaza in Montpelier on December 7.

Respectfully submitted,

Lisa Ginett, VSLS Executive Committee Secretary

Attention Members

Executive Committee meetings are held on the third Thursday of every month, and all members are welcome to attend. Email kelly@vsls.org for info.



January 17, 2019 • 6 p.m. • Conference Call

In attendance: Mark Day, Lisa Ginett, Keith Van Iderstine, Paul Hannan, Gayle Burchard, Becky Gilson and our Administrator, Kelly Collar. Absent: Nate Yager.

SECRETARY'S MINUTES

Minutes for the Executive Committee Meeting dated November 15, 2018 were reviewed. Upon motion duly made and seconded it was unanimously RESOLVED: to approve the minutes of the Executive Committee Meeting dated November 15, 2018.

TREASURER'S REPORT

Treasurer's report for the period of Jan. 1 to Jan. 16, 2019: Gross profit for the period was \$ 15,686.50; total expenses were \$ 4,645.90; for a Net Income of \$ 11,040.60. Bank Account Total = \$ 66,590.12. Our Treasurer, Keith Van Iderstine, also presented a year of 2018 Profit & Loss Budget vs. Actual showing a gross profit of \$60,045.88 (budgeted: \$66,650.00), total expenses of \$59,624.74 (budget: \$66,650.00) and a net income of \$421.00. The treasurer's report was reviewed and accepted. Keith also noted that we are paying for the Round Tables meeting out of this year's budget.

ADMINISTRATOR'S REPORT

Kelly reports that the Spring Seminar will be held on April 12 at the Castleton University. Dan Martin will present 4 hours on new datums. The afternoon session is not certain but it may be a presentation by a professor of Geology on old stone walls. That presentation is pending review by the Program Committee. Kelly mentioned that we need a new Program Committee member, as we only have 4 members right now since Tim Rockwood stepped down. The group wondered if Leslie Pelch's replacement at VCGI, David Fox, might be willing to take Leslie's place on that committee.

Kelly noted that we had several engineers at our last seminar as they now require educational credits to renew their licenses. We wondered about site designers; those of us that work with this profession know that they also require continuing education to renew their licenses but their continuing education is provided by ANR. Maybe VSLS might inquire whether the ANR would agree to one (or more) of our seminars as continuing education for the site designers.

"The Cornerpost" is going out in the first week of March. Kelly also noted that we have four publications on our website for sale to people studying for the LS test. We have been charging for the publications but Kelly notes that they all need to be updated. Mark remembered that Liam Murphy showed some interest in updating the VT Survey Law publication. He said that he would ask Liam about it as well as Paul Gillies who is now semi-retired and might have an interest in the project.

PRESIDENT'S REPORT

Mark Day had an interest in seeing if we could arrange some more social activities for VSLS this summer. We

discussed trying to arrange some regional breakfasts for the membership, maybe by county. The surveyors and engineers in the St. J area have a breakfast on the first Wednesday of the month. It is arranged by Andy Dussault, and Mark commented that he would try to speak to Andy as to how he arranges the event. Perhaps we could put a request in "The Cornerpost" for someone to step up and arrange a breakfast in their area. Mark will attempt to arrange a Chittenden County breakfast.

Mark also updated us on the letter that he agreed to write to the Board of Land Surveyors regarding Parol Evidence. It is not written yet but he promised to get it done no later than February 7 and send it to Paul for review.

Mark called Brad to ask him for the hard drive with the map scans in order to have a copy for VSLS. Brad said that within a month he would have all of the scans compiled, put on a hard drive and delivered to Mark's office. Scott Taylor has offered to index the scans on a new data base.

NSPS

NSPS suggested an amendment for all state societies Memorandum of Understanding, and Kelly put together a draft of what this would look like. Essentially, we are removing the language regarding the Board of Governors (now dissolved) as well as the specific dues amount, since this will periodically change. Upon motion duly made and seconded it was unanimously RESOLVED: to approve the MOU revisions to the VSLS / NSPS agreement.

OTHER BUSINESS

Paul suggests that we check the link that he sent us to read up on the proposed language for the upcoming Parcel Mapping bill so that we know what it says.

OPUS was shut down for a brief time as part of the government shut down, but apparently it was decided that this service is an "essential function" and it was reinstated.

The group had a brief discussion about the Zoning Administrator of a certain town having accepted a site plan as a subdivision plat. Mark did his best to educate the ZA that the site plan was not done by a surveyor, was not stamped and signed and did not meet Statute Requirements for a subdivision plat. This particular Zoning Administrator was adamant that we would stand behind his decision to accept the site plan in lieu of a subdivision plat. This ZA is not the only one in the area. What is the remedy? Perhaps we could present a program for Zoning Administrators during Vermont League of Cities & Towns Town Officer's meeting.

The next meeting will be held on Feb. 21, 2019. There being no further business, the meeting was adjourned at 6:45 PM

Respectfully submitted,

Lisa Ginett, VSLS Executive Committee Secretary



VSLs Annual Business Meeting • Dec. 8, 2018 • Capitol Plaza Hotel, Montpelier

This meeting was called to order at 1:01 P.M. In attendance from the Executive Committee were Mark Day, Lisa Ginett, Keith Van Iderstine, Gayle Burchard, Becky Gilson and our Administrator, Kelly Collar. Absent: Nate Yager and Paul Hannan. Also in attendance were the general membership.

SECRETARY'S MINUTES:

Minutes for the General Business Meeting dated Sept. 14, 2018 were reviewed. Upon motion duly made and seconded it was unanimously RESOLVED: to approve the minutes of the General Business Meeting dated Sept. 14, 2018.

TREASURER'S REPORT

Treasurer's report for the period Jan. 1 to Dec. 5, 2018: gross profit for the period was \$58,672.76; total expenses were \$57,666.30; for a net income of \$1,006.46. Total assets: \$56,759.12. The report was reviewed and accepted.

ELECTION OF OFFICERS

The Slate of Officers as warned in "The Cornerpost" was reviewed. There were no further nominations from the floor for consideration. Upon motion duly made and seconded for one vote to be made for all officers, it was unanimously RESOLVED: to approve the Slate of Officers as warned in "The Cornerpost." It was noted that after many years of service on the Program Committee, Tim Rockwood is stepping down and will be replaced as chair of the Program Committee by Joe Flynn.

EDUCATION FOUNDATION

It was noted to the General Membership that two of the three long-time members-at-large of the Education Foundation had already been replaced by vote at the November 5 Education Foundation meeting. Scott Taylor will serve the remaining portion of Norm Smith's term and will be chair of the committee, and Bob Holt will serve the remaining portion of Pete Chase's term and will be vice-chair. As we also needed to find someone to serve Mike Raboin's term, Ethan Gilmour agreed to become the third member-at-large. There were no further nominations from the floor, and it was unanimously RESOLVED: to approve Ethan Gilmour to serve the remaining term of Mike Raboin as member-at-large on the VSLs Education Foundation.

VSLs President Mark Day thanked Pete Chase, Norm Smith and Mike Raboin for their very long service to the VSLs Education Foundation. They received a certificate of thanks and a gift along with an ovation from the Executive Committee and the general membership.

OTHER BUSINESS


The Executive Committee and the general membership discussed the other two items that were warned in the Summer 2018 issue of "The Cornerpost": the dues increase and the change in "life membership" criteria. VSLs President Mark Day read the proposed dues increase numbers, detailing how much was being voted on for each category of membership. Upon motion duly made and

seconded it was unanimously RESOLVED: to approve the increase in dues as warned in the Summer 2018 issue of "The Cornerpost."

Mark also read the revision of "life membership" criteria. It is noted that there was a fair amount of discussion about the definition of the criteria change. The Executive Committee wanted to make this change to reflect the longer time period spent between the retirement (and life membership) age of 65 years and actual retirement from surveying. Many of our members are still fully involved in the business of surveying long past that 65 year age and should be able to pay dues as full members. After a fair amount of discussion on the definition of "primary source of income" and Mark's comment this is based on the honor system and would not in any way be checked on, a vote was taken. Upon motion duly made and seconded, it was unanimously RESOLVED: to approve the bylaws revisions to the life membership criteria as warned in the Summer 2018 issue of "The Cornerpost."

There being no further business, the meeting was adjourned at 1:32 PM. The next General Membership Meeting will take place on April 12, 2019 at the Spring Seminar.

Respectfully submitted,
Lisa Ginett, VSLs Executive Committee Secretary



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👍 WONDROUS WOOD

Brad Perry, L.S., sent in this photo in the last days of February. "While surveying, we occasionally run into a very exceptional tree," he said. "I normally take note of it and perhaps take a quick photo. I thought that I would share a photo of this behemoth Oak tree out on Holiday Point in North Hero, VT. The diameter of this tree was 7 feet. I did not have time to measure the circumference."

Brad notes that he would love to see photos of other large diameter trees that surveyors are finding out there.

Have you
photographed an
interesting tree
while surveying?
Please send it to
kelly@vsls.org



👍 TOURIST TRAP

"So you thought you found the monument marking the intersection of street rights-of-way lines in the French Quarter of New Orleans! Unfortunately, you would be wrong. Instead, what you found was the cover of a termite trap. However, the covers do make a good traverse point in an urban setting."
—Submitted by Harris Abbott, L.S.

👍 NO GOLF TODAY

Joe Flynn, L.S., sent in this photo from March 2018, staking out a building in the snow. The crew created a makeshift instrument umbrella out of a golf umbrella, no doubt dreaming of better weather outdoors.





Spring Seminar

6 PDH
APPROVED

Friday, April 12, 2019 • Castleton University, Castleton VT

Program Schedule

- 7:15 AM** Registration & Breakfast
8:00 AM New Datums and Activities Related to Datums
12:00 PM Luncheon & Business Meeting
1:30 PM Surveying in the Highway Right of Way
3:30 PM Concluding Remarks

Registration Fee	Through April 1	After April 1
Member in Good Standing*	\$140.00	\$165.00
Non-Member	\$190.00	\$215.00
Life Member	\$105.00	\$130.00
Non-member technical staff attending with member	\$119.00	\$144.00
Three attendees from same firm (one must be member)	\$119.00	\$144.00

*Must be current with dues to qualify for the member rate. Members of kindred associations qualify for the member rate. Education credits are valid in Vermont and New York.

Morning Seminar

New Datums and Recent Activities Related to Datums (4 PDH)

Presenter: Dan Martin, Northeast Regional Geodetic Advisor

The new datums workshop covers a "refresher" on why we are moving to new datums and also discusses related topics like horizontal and vertical transformation tools, GPS on Benchmark initiative, state plane coordinates, new data delivery systems, foundation CORS, and more. The workshop will also cover the Real Time Network (RTN/VRS) within the Vermont CORS software, with information about its benefits, limitations, and how best to utilize it.

Afternoon Seminar

Surveying in the Highway Right of Way (2 PDH)

Presenter: Richard Hosking, P.E., Retired VTrans Professional

This seminar will focus on surveying in and near the Highway Right of Way. The two main components of the presentation will cover the process for obtaining permission to work in the Highway Right of Way and how to safely work in the ROW, including complying with the Manual on Uniform Traffic Control Devices (MUTCD).

The Spring Seminar will be held at the Castleton University Campus Center, in the 1787 Room.

For directions, a campus map, and lodging options, visit: castleton.edu/admissions/visit

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