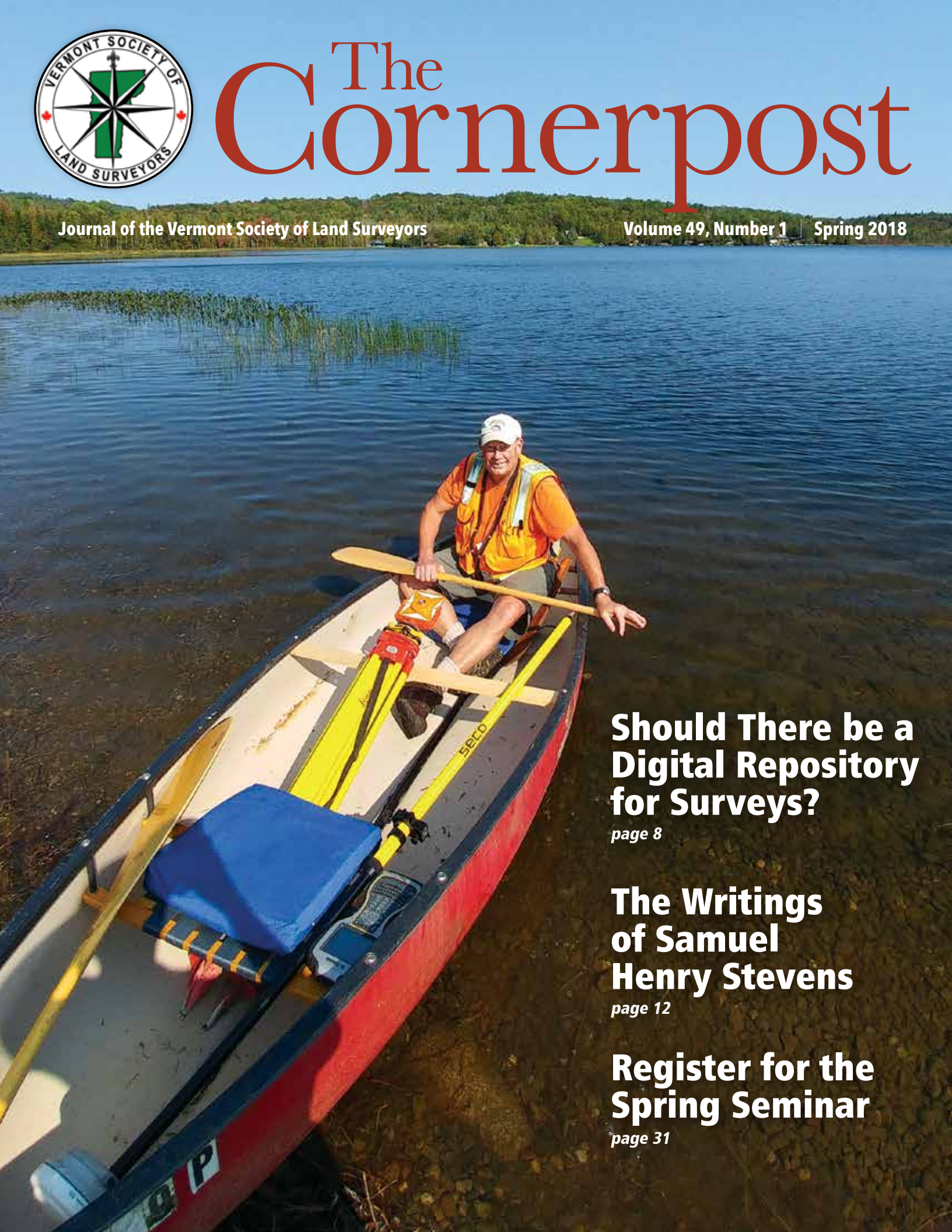
The Cornerpost

Journal of the Vermont Society of Land Surveyors

Volume 49, Number 1 | Spring 2018



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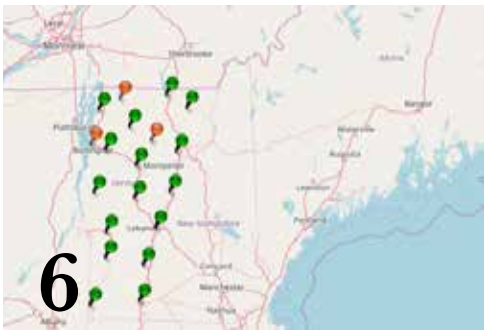

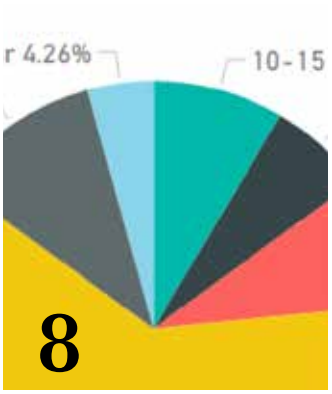

Feature Articles

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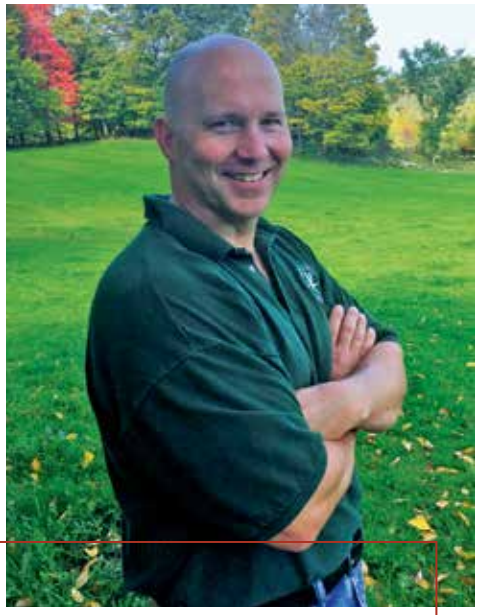
Send In Your News

The success of *The Cornerpost* depends on all of our members. Please consider making a contribution to an upcoming issue. We would love to hear about your experiences in the field and your thoughts about historic writings or current events. Or, snap a photo while you're at work and send it to **kelly@vsls.org**.

About the Cover

VSLS President Mark Day, L.S., sent in this photo from a project that Trudell Consulting Engineers completed at Brownington Pond in Derby last summer. Survey technician Andy Lambert is sitting in the canoe. "We had to run a traverse across the pond to locate a couple of boundary markers on the opposite side," Mark explains. "It doesn't have to be all work all of the time. You can mix some fun in once in awhile. The guys had a good time with this one."

Mark receives a $50 gift certificate to the restaurant of his choice for sharing this image for the cover. Send your image for the next issue to kelly@vsls.org.



Who's on the VSLS Executive Committee?

Please get in touch with any member if you have any suggestions, information, or concerns to share.

Mark Day, President
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gayle@littleriversurveyvt.com

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bgilson@cea-vt.com

Paul Hannan, Director
802-454-1074

Looking back while moving forward

I WOULD LIKE TO START OFF by saying thank you to Gayle Burchard for her tenure as President. I am quickly realizing the time and effort involved with the position. Gayle committed much of her time to traveling throughout the region to represent the VSLS at other state societies' conferences. I am hoping that she (and other Executive Committee members) will be willing to share in this responsibility moving forward. Having a busy young family and a demanding job fills up most of my time, so all I can say is that I will do my best to fulfill the obligations of the position. Nonetheless, I am honored to represent the society as its 25th president.

In my first address to the society as President, I made the mistake of bringing up the topic of increasing dues. I immediately regretted it, but I put it out there and stand committed to working with the rest of the Executive Committee to provide the membership with the necessary statistics to reflect our current situation. You can see some preliminary statistics on page 11 of this issue.

In some recent news, a member alerted us to a proposed Legislative bill that would eliminate Adverse Possession. Bill H570, which is being brought to the floor, would completely wipe the law off of the books in Vermont. The Executive Committee took a vote to allow Paul Hannan, L.S., to speak to lawmakers on behalf of the VSLS, basically begging them not to consider it. It doesn't sound like it has much traction anyhow, but I (we) are certainly open to individual comments or opinions on this. If there are any other bills being proposed that could affect our profession, please let us know about those as well.

I am sitting writing this article and realizing how much actual work I have to do. I cannot remember a cold winter when there was this much surveying going on. Every day the survey crews are headed out the door dressed up like Ralphie's little brother, Randy, in *A Christmas Story*, for a full day of field work. There wasn't much down time to kick back and take it easy for a mid-winter hiatus this year. Hopefully we will all have a successful and safe year ahead.

I look forward to seeing you all at the Lake Morey Resort in April. It has been great to see a lot of younger faces at recent meetings. Maybe it's due to the group discounts, or maybe surveying is actually appealing to Gen Z. Whatever the reason, we'll take it!

Sincerely,

Mark

MARK DAY, VSLS PRESIDENT

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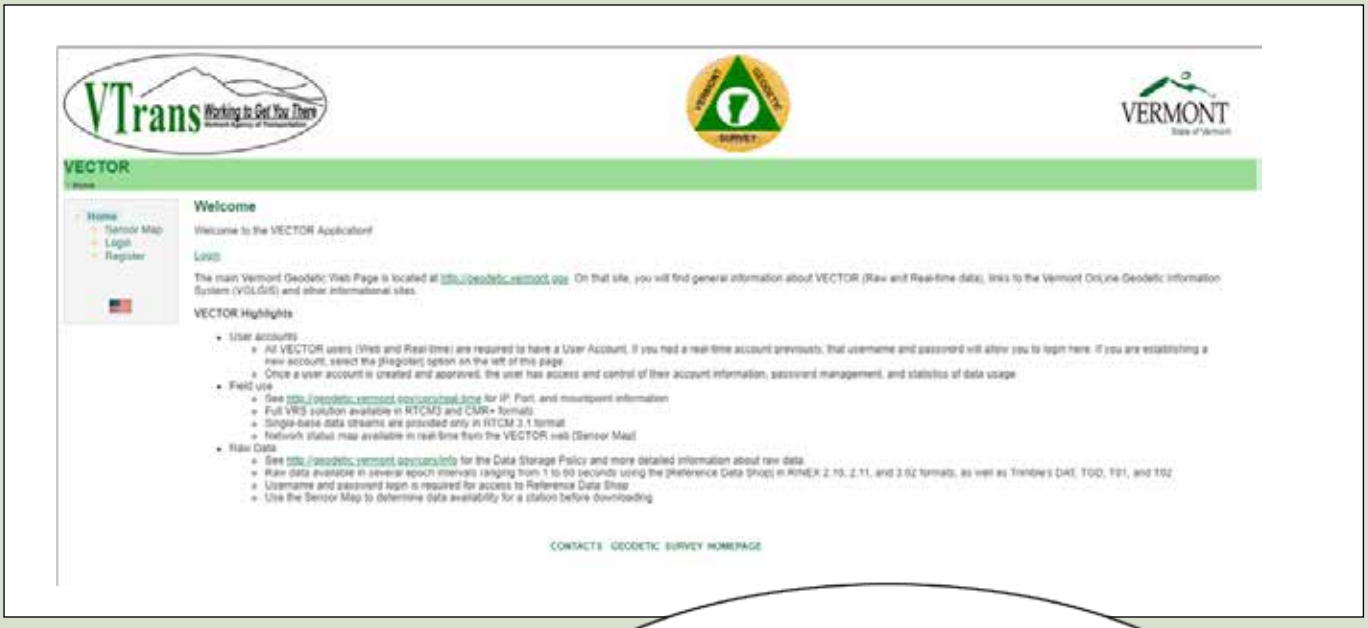
Vermont **Real-Time** Network

BY DAN MARTIN, NORTHEAST REGIONAL GEODETIC ADVISOR

KNOW BEFORE YOU GO!

I had a conversation with a surveyor a while ago. He exclaimed that it was frustrating to arrive at a job, get everything set up, and then fail to get any work done because the Vermont Real-Time Network (VECTOR) was down, or particular base stations he was interested in using were experiencing problems. Actually, it is not uncommon for me to receive a phone call (or two) from a surveyor in the field who has just found out the hard way that the network or a station was down. I was surprised they did not know that they could check the status of the network and individual stations by simply checking the VECTOR website: **http://vector.vermont.gov**.

SAVE TIME. CHECK **VECTOR** BEFORE YOU HEAD OUT!



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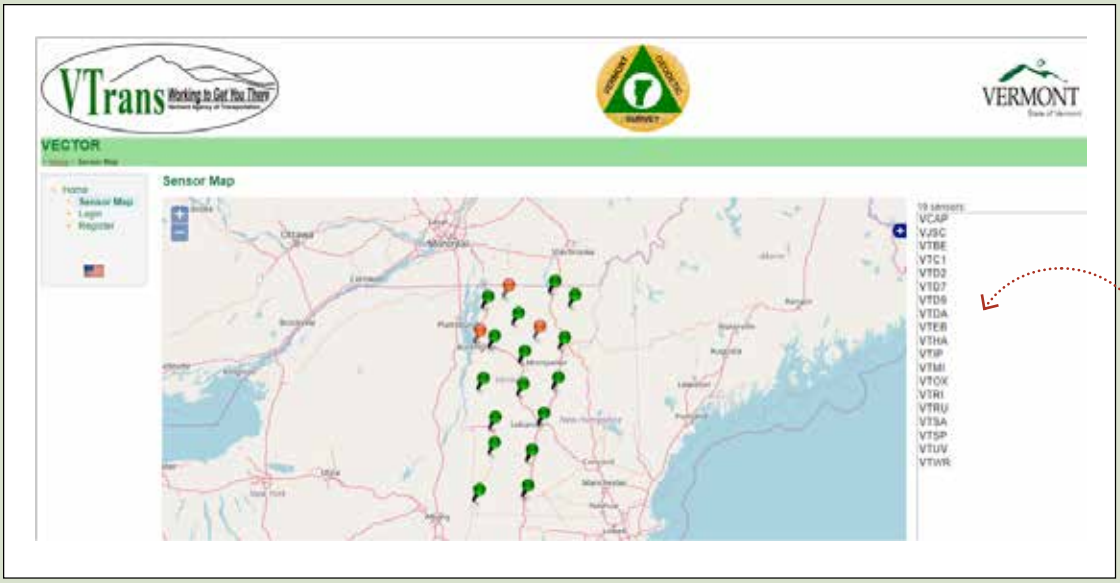
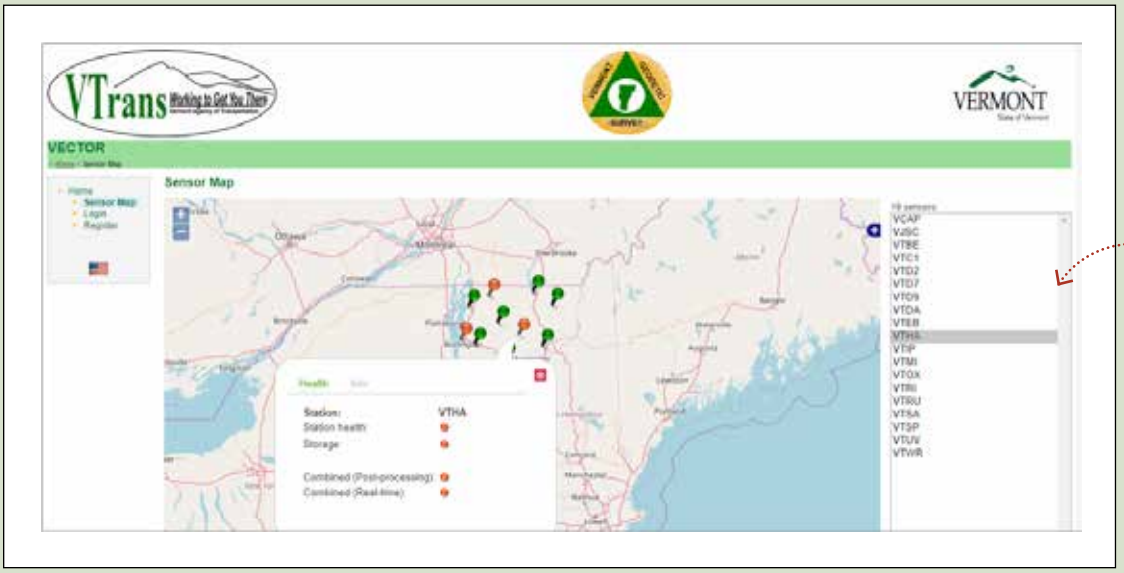
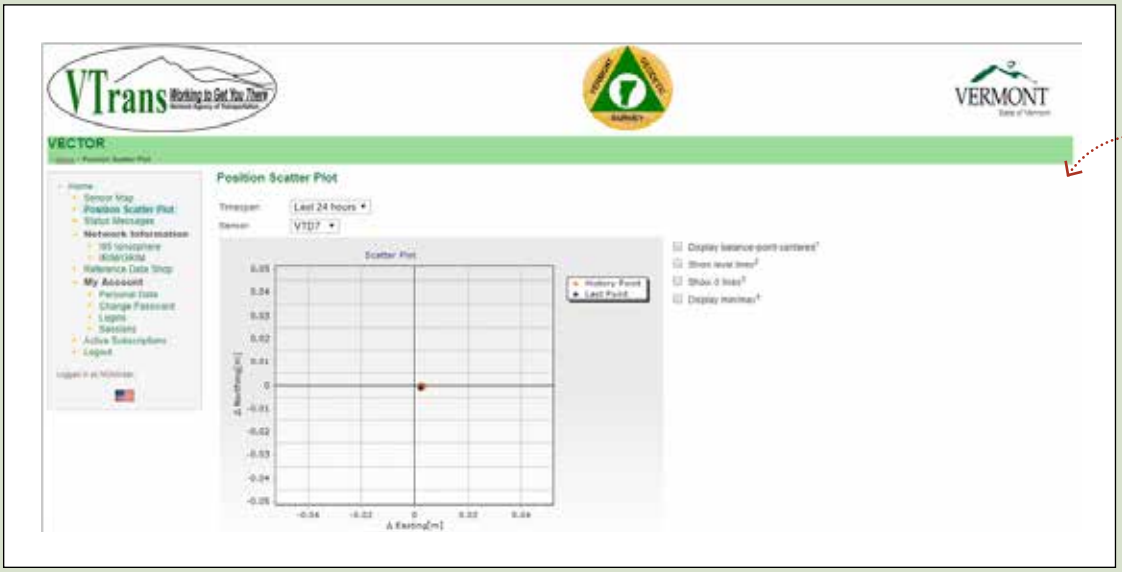


So as can be seen here, stations VTHA, VTUV, and VTEB are currently not available/ off line (hovering over the mark brings up the station name). If the station were colored orange/yellow instead of red, it would indicate that some services for that station were available, e.g., that the connection exists, but that the real-time stream is not available. A more detailed status report can be accessed by clicking directly on a mark. Here we can see which (if any) services are available for a station experiencing problems.



If you have a Real-Time account, then you have access to log into VECTOR using that username and password. I will not go into details here, but after logging in, users have access to info like station scatter plots, and the ability to manage their accounts.



So taking a few minutes to check the network status before heading to the field, planning tomorrow's work, or trouble shooting connections in the field can save you time, money, and frustration.

Should There Be a Digital Survey Repository for Vermont?

Responses from the Recent VSLS/VCGI Survey Find Support for Establishing a Repository

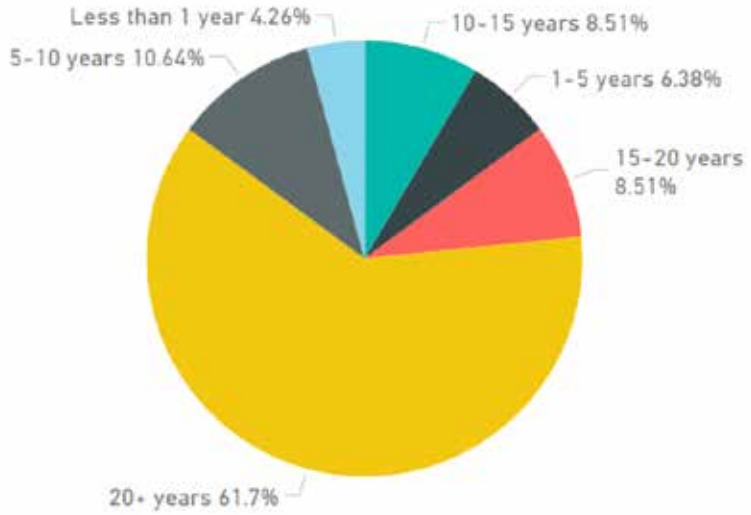
BY JOHN ADAMS, VCGI DIRECTOR

Back in December, VSLS and the Vermont Center for Geographic Information sent out a survey to the VSLS membership to help gauge the level of interest in creating an official digital repository for surveys in Vermont. Of the 56 respondents, 89% indicated that they see high or very high value in having access to a repository!

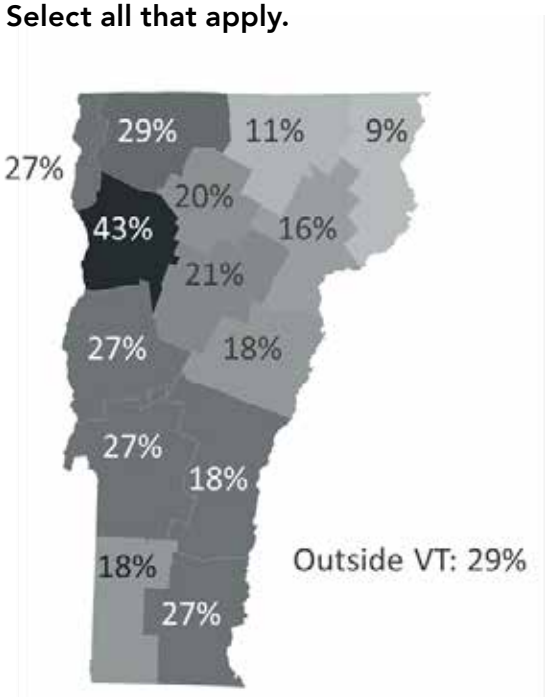
Over the coming months, a working group consisting of representatives from organizations on the Property Parcel Data Advisory Board (including VSLS) will begin to explore what it would take to create a repository in Vermont and evaluate what others from around the country (and beyond) have done. The survey results have provided a great starting point for this endeavor.

We'll keep you updated with any progress made.

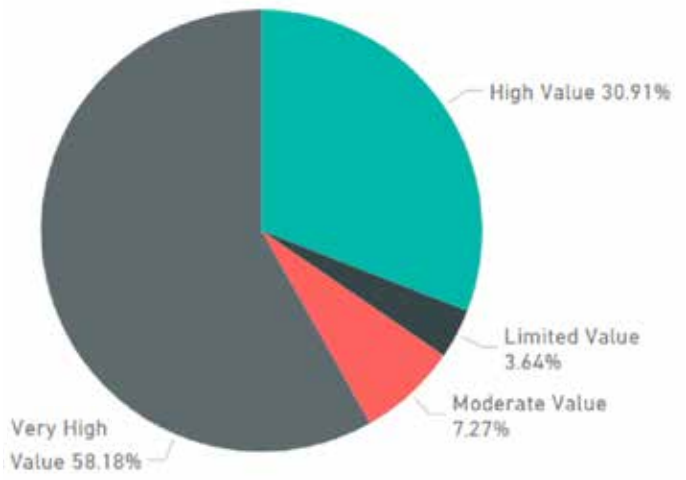
Question 1: How many years have you been a licensed surveyor?



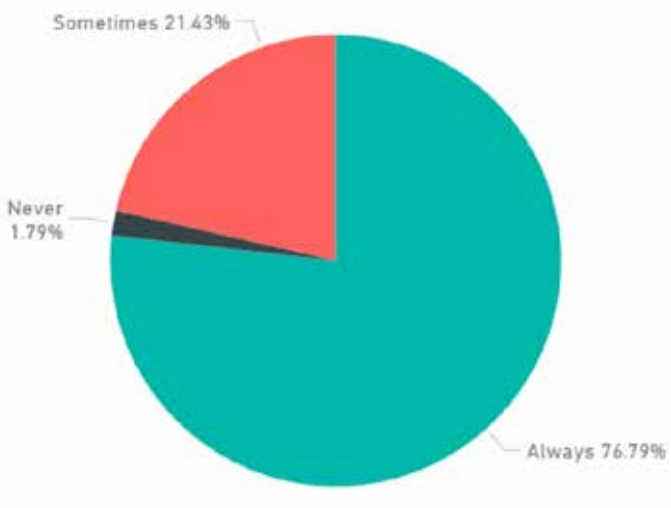
Question 2: Where do you generally perform surveys? Select all that apply.



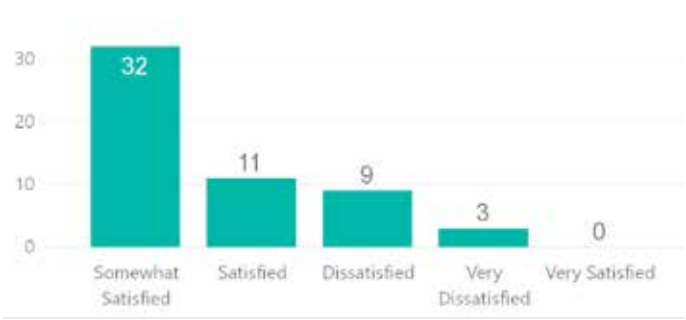
Question 3: How much value do you see in having access to a centralized statewide digital survey repository for municipal land records?



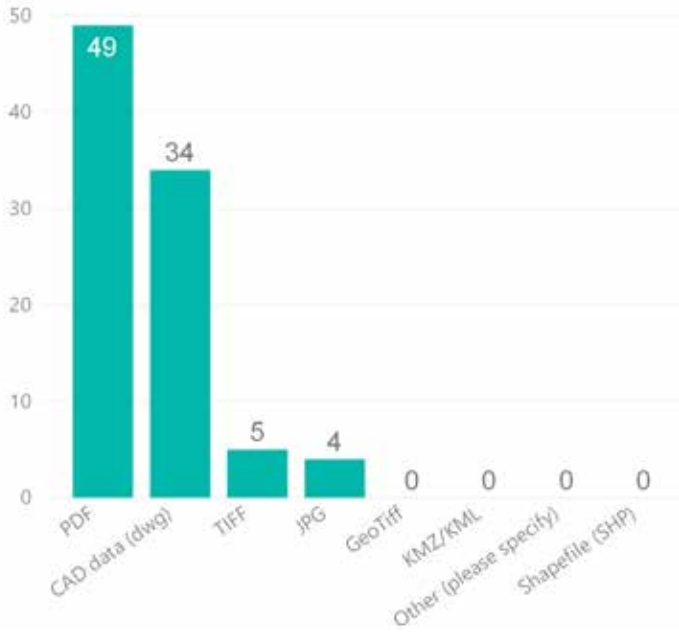
Question 6: Do you currently create digital versions of your surveys?



Question 4: Please rate your overall level of satisfaction with existing access to surveys recorded in municipal offices?



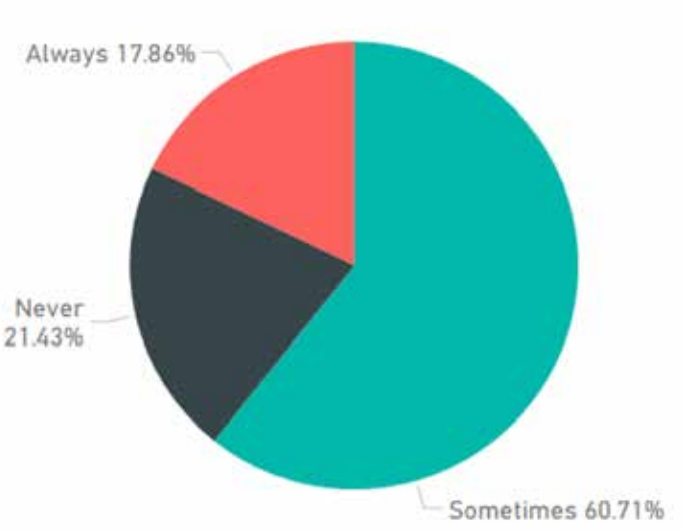
Question 7: If you do create digital versions, what format do you use? Select all that apply.



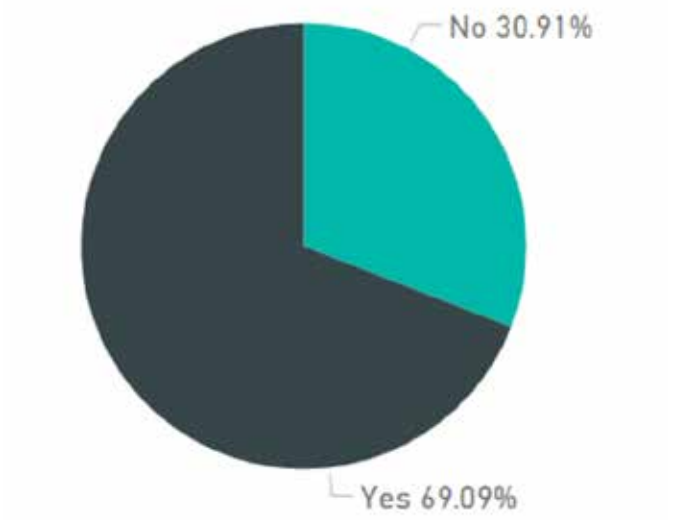
Question 5: Is there any particular state, county, or municipality that you think does an excellent job in making surveys available?

- New Hampshire (11)
- Massachussetts (4)
- Cheshire County, NH (2)
- Brattleboro (2)
- Anyplace with digital data/scanned surveys (2)
- Town clerk portal (2)
- New York (1)
- Franklin County, MA (1)
- Saratoga County, NY (1)
- Underhill (1)
- Tunbridge (1)
- Cabot (1)
- Montpelier (1)
- Marshfield (1)
- Royalton (1)
- Colchester (1)
- Ludlow (1)
- Killington (1)
- Manchester (1)
- Huntington (1)

Question 8: Do you currently include Vermont State Plane Coordinates on your surveys?

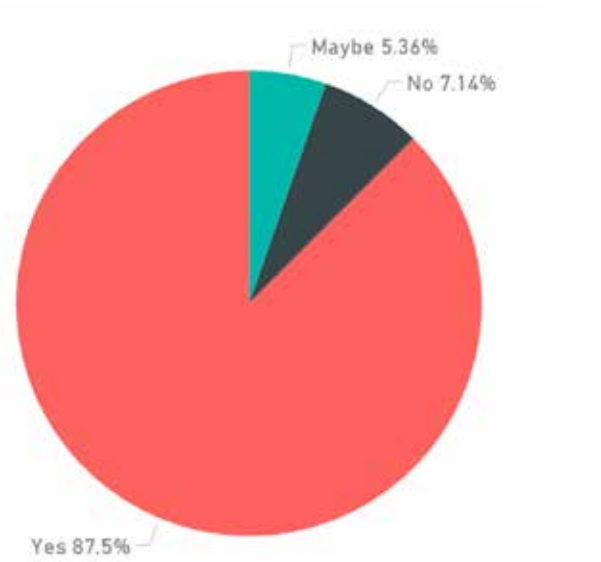


Question 9: Do you have the ability to georeference digital surveys?



We'll continue to provide updates as the working group of representatives from organizations on the Property Parcel Data Advisory Board, including VSLS, explore what it would take to create a repository in Vermont.

Question 10: Would you support a state law requiring surveys for any subdivision or boundary line adjustment in Vermont?



Question 11: Do you have any other thoughts, ideas, or concerns regarding the creation of a central survey repository?

"extremely helpful"
"excellent idea"
"good idea, long overdue"
"some towns won't allow us to copy maps anymore or can't make full size copies of surveys"
"needs hold harmless clause to protect surveyors who donate their surveys"
"VT seems to be very behind on this"
"all should be georeferenced, even if just indexed that way"
"will make research easier and more efficient"
"better do this before older generations and their records disappear"
"the MA system works great"
"should be publicly accessible and free to use"
"I would pay $2-5 per survey"
"it's not a matter of 'if', but 'when', we serve the public at large"
"most of my clients choose not to have their surveys recorded and I would need to respect that"
"I do not see the need for a central survey repository"

Information for Discussion about VSLS Dues

At the fall conference in September, we will vote on whether to raise VSLS membership dues. The last dues increase was in 2013; however, since that time, $40 of full-member dues have been sent directly to NSPS for the required NSPS membership, and the VSLS portion of the dues has actually decreased by $15.

Here are a few statistics to review before our dues discussion.

Current VSLS Dues	
Full members (includes NSPS fee)	$150
Life members (through 2012)	$20
Life members (2013 and after)	$75
Associate members	$50
Out of state members	$75
Out-of-state associate members	$25
Student members	$5
Sustaining members	$100

VSLS Dues 1996–2017 (for full members)

1996 – 2009	2010 – 2012	2013 – 2018
$100	**$125**	**$150** ($110 VSLS/$40 NSPS)

While many expenses have remained level from year to year, over the last five years, some expenses have gone up.

Payroll Expenses	
2012	2018
$15,310	$19,750

Travel*	
2012	2018
$1,405	$6,000

Bank Fees (credit cards)	
2012	2018
$520	$1,500

*Includes NSPS Director, President, Young Surveyor Representative & Administrator

Membership Numbers

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Full	157	151	156	153	144	137	129	118	115	115	113	98	100	97	94	99	91	89
Associate	22	18	20	24	23	24	19	25	25	21	19	19	17	19	18	24	17	21
Out of State	25	27	27	26	25	26	31	37	36	34	29	24	26	26	26	31	31	34
Sustaining	10	8	12	15	15	13	13	11	11	10	9	7	8	7	8	9	6	7
Life	25	22	23	20	33	24	29	38	39	40	31	33	33	37	38	42	40	44
Emeritus	4	4	4	3	3	3	3	3	3	3	3	2	2	2	2	1	1	1
Honorary	1	3	3	3	3	4	4	4	4	5	4	4	4	5	5	4	4	4
Student	2	1	0	0	0	2	1	3	1	1	0	0	0	0	0	0	0	2
Total	247	235	245	244	246	233	229	237	234	229	208	187	190	193	191	210	190	202

Experiences & Incidents in the Life of Samuel Henry Stevens as a Land Surveyor

part 1 of 2

Introduction

I was recently provided the 1948 Samuel Henry Stevens life summary by the City of Lebanon's GIS Coordinator, Mark Goodwin. Sam outlines his experience and incidents mostly regarding land surveying.

I have great respect for the wonderful survey work Sam Stevens produced. His plans are well noted, researched and drafted with care. He talks about his use of modern equipment! Complains about attorneys and engineers!

The experiences are mostly in the Lebanon area with some in White River and other surrounding towns. I hope you enjoy reading Sam's Life Summary as I have. One of my favorite quotes being "I would rather people would like my work than me. It will last longer."

I believe all surveyors will benefit from Sam's wisdom.

Respectfully submitted,
TIM ROCKWOOD, VT 537 NH 618

AFTER ANY PERSON HAS WORKED or been associated with any one occupation for a life time, whether important publicly or not, he is more than likely to find new ways or short cuts in practice, that with a proper motive of helpfulness and not to criticize the skill of others, may be found useful for those who are to follow, and, is it not his duty to extend this information on to others that they may profit either by his good works or mistakes?

The following is intended by the writer to contain sense of meaning, and it is only hoped that some reader may get the satisfied feeling and same useful thought of expression herein given, as that felt by the writer when assembled.

Nobody can value such knowledge without first having lived it.

Samuel Henry Stevens
Lebanon, New Hampshire
February 2, 1948

When, in reading over certain incidents and problems as given by other land surveyors, I have for quite some time felt the urge to write down some of my own experiences or accomplishments along this line of work.

The restraint from so doing has been due partly, that I would very likely find myself saying things about others of higher positions that I should not, but have finally decided, however, to give the facts as I have found, worked, and lived them, with no innerfeeling or motive to build myself up in any false way.

Many times I have gone out with a feeling similar to that of a physician or even a preacher; to help people, that in my mind is a motive of a high degree and that which should always be shown by one who is a TRUE land surveyor.

True, there will be conflictions and controversies which, when properly or efficiently explained, the adjoiners will usually understand and accept. Again true, there have been mistakes on my part in the interpretation of the intent as given by deeds, only to find later that the accused was right, and to whom is due my humble apology.

Always, the sole purpose is that adjoiners acquiesce between themselves when deeds conflict, in a logical horse-sense manner, which seldom is the source of any serious sacrifice to either. Such a mutual settlement will cause a better and more friendly feeling to exist forever.

One of the most humiliating and low down feelings I remember in this work was in 1943, when R. Townsend, Bill Dunn and I ran one and one half miles on the Newport-Unity town line, working careful as possible with back sights lined to small nails and plumb bob strings that came out within one foot of an old stone post set on the line with the date 1770 chiseled on it that those old boys had set after they jammed through the woods only with their compass and 2-rod chain of those days, and we, using all modern equipment with the most careful and accurate work had come almost to their same point that no doubt took us four times as long to do. I don't know how they did it, but they did, and deserve much more credit because of the crude tools they then had to use.

B.F. Dorr says, in his account of running long section range lines with modern instruments, he came within inches of the original line established years before by compass.

In *Harper's*, July 1947, Kenneth Andler gives an interesting account on the life of Alfred Teare, the most noted of all New England land surveyors, who always used a compass and whose boundary lines when once established, were never questioned. And marked thus, /O/, that I have followed in the woods.

Isaac Sanborn always said, to relocate old boundary lines, send a man out with a compass and 2-rod chain.

The compass is known not to be an instrument of precision and may be varied by magnetic storms or any local attraction such as wire fences or minerals in the ground, and always subject, to the diurnal, or daily, change that has shown a maximum of 16 minutes. This is an interesting experiment, the change being obviously noted at its height about l:00 P.M. Actually, if a line was run absolutely by compass, it would take the form of a large letter "S" throughout the day.

One of the most satisfactory times I recall was in 1933 when we ran on the Lebanon-Plainfield town line a distance of 133 rods for Harry Duncan after making calculations for the difference in Magnetic delineation over a period of 97 years.

The deed called for a stone post at the end of this line which we little expected to find, and took along an iron pipe to set in the ground. There was a growth of large pine trees where we thought the corner should be as shown by measurement; we then drove the iron pipe down exactly on the good old

granite post that had fallen over and become covered over the period of time. This is an exceptional case, very uncommon, I have dug many times, unsuccessfully, for bounds or markers mentioned in deeds and supposed to exist. One time we dug down three and one half feet on Campbell Street and found a good granite monument with iron pin in it. It is surprising the way these permanent markers, once well placed, can and do become obliterated, many times through neglect of the owner. It may be better to keep them covered, but always checked in.

One of the most exasperating moments I have known in this work of more than 30 years, is in the construction of deeds. This is really too small a job for a high-pressured lawyer who can shake his head over the phone for fifty or a hundred dollars, and the making of deeds is too often slighted with an incomplete description, thus causing an unnecessary amount of tedious work and bother for those who lay it on the ground.

A rather lengthy deed was made by Lawyer Stevens (no relation) of a large tract in White River Junction, that I have since had occasion to check from the Registry, and found to contain a volume of defects, to be not only misleading but giving absolutely the wrong sense of meaning. In after years, the poor unfortunate surveyor who undertakes to work this land out from the recorded deed, would not only meet himself coming back, but will do well to stay on his own side of the Connecticut River. And yet, Forest Hills, Inc., called it a wonderful instrument because they got 16,000 dollars from the town of Hartford for a gravel bank. Seriously, I am glad that the plan I made of this property is in their town records, and that the bearings it shows are all referred to the True Meridian, which will never change.

In 1934, Lawyer Hibbard, who was doing business before 1900, made deeds on Parkhurst Street into the Northern Railroad which when checked by W.J. Byron, then C.E. of the B & M were returned unaccepted because of an incomplete detailed description.

In 1894, there was a warranty deed made from Frank G. Hough and wife to the Town of Lebanon including land that is now Hough Square.

This deed was made by Charles A. Downs, a trustworthy man of public position and experience. The Town at its next annual meeting voted to accept this land to be used for a public park or plaza. Probate records show that Enoch, the father of Frank, willed all of his estate to the heirs of Frank, and that Hough Square was never owned by Frank, which title into the Town of Lebanon can be none other than invalid.

Indeed Annie B. Gee et ux to Frank C. Churchill in 1912, of property at corner of Court and North Park Streets, there is a distance of 71 feet given on North Park Street, and mentions all of the 127 feet except 25 plus 25, previously sold out, and also the 6 feet frontage for widening Court Street granted to the Town of Lebanon in 1846.

From Town Records, the facts appear to be, that the Town laid out the widening of this 6 feet, but at the next annual meeting it was voted to be discontinued. There is no recorded deed into the Town of this 6 feet and my plans show the frontage of Churchill to be a distance of 77 feet from these recorded reasons. Deed made by a prominent lawyer, Fred Jones, who failed in a complete search.

While on one job in White River Junction, I asked Frank Fucci how he knew the spring was 150 feet from the corner when it was less than 40 and did he know there was an iron pin at the northeast corner of the state road which was not. He would assume nothing given in his deed except his acknowledgement of grantors signature.

Such blunders usually fall in the lap of the humble land surveyor who must meet them with a smile while his client wonders why it takes him so long to do that particular job.

Except for one's children, I have known of nothing that people are any more sensitive about than their property lines; which to my mind, is wholly within their privileged and dutious rights, and are deserving of all possible bestowed aid or protection. Whether desert sands or mountain rock, it is theirs and they own it and can see it. It is a part of the earth, and that upon which they exist and hold sacred. Regretfully, it is something of which I have never owned one square foot in my whole life.

It is not strange that the measure may vary a few inches or a root from where expected, and perhaps one may dislike to see his neighbor, already distrustful, get any more land. Seldom, on old lines to be re-established from recorded deeds, will they add together over a distance of a laid street or original property line, and conflictions may be expected. If markers have become obliterated or any possible change has occurred, either by occupation or acquiescence, it is usually better if possible, to explain and show all adjoiners existing conditions, using "horse sense," than to undertake to say to one, "this is where you stop" and "you don't go beyond here" to the other. After all, no line is legal unless agreed to by both parties, unless established by Court, which is always better to keep out of.

Often times this kind of work looks to others mysterious or hard to understand, particularly the instruments they see standing around, and yet is it surprising how many think they can help measure or hold the rod (said to be unlawful) that they say will be "near enough."

A trapeze performer cannot complete her act of turning two and one half somersaults in the air without her assistant to catch her at the exact timed instant, who could easily make the whole stunt a failure, but the performer gets the applause.

A baseball catcher is just as essential in team work or the game as the pitcher, although it is the pitcher to whom the game is credited.

Just exactly so in measuring, one end of the tape is as important to hold properly as the other, and it is needless to read the head end in hundredths if the tail end is held incorrectly, but the one who does the reading is responsible for any error of closure. Just so true in the holding of a rod, it must be held plumb or the sight will

not be in line with the point on the hub. The little things that "anybody can do" are just as important for precise work as the man on the "gun" and all must be right.

Some years ago while working out a sub-division in West Lebanon for Harry Johnson, a Central Vermont Railroad Locomotive engineer, he said he wished he could know how to operate my instrument. I told him if I could get up on that seat in that big engine of his and pull on a little lever and look back to see a mile of train crawling along back of me around curves and up the grade, and some would-be land surveyor ever looked toward me and said good morning, I would tell him "None of your business."

It is not uncommon to find encroachments of buildings built over and beyond a property line which may become to be a nuisance in that the owner may be forced to remove the building or pay rent. In 1933, while working land at Scytheville Railroad Underpass, I discovered the Socony gas station to be located entirely within the laid out highway, causing a serious traffic hazard, with the result that the Standard Oil Company paid to the Town of Lebanon an annual rental fee of sixty dollars together with a liability insurance of $50,000.

In working the lines of property owned by my wife at School and Messenger streets, I found her barn or garage, extended into Messenger Street beyond the line eight feet. I have found so many other people wrong, that I was glad to find this in my own family.

In this particular case, the trespass existed when she bought, but that is no alibi, it was for her interest as a grantee, to insist that the corners be located and well marked by the granter. It is always better to know your lines and is just as much the obligation of one owner to keep the other owner off, as it is for the other to stay off. This rule would apply to street lines as well as any other property line, but while the Town may acquire from an individual adversely, that same privilege is not given to the public into any street or highway.

In 1938, when working a 250 acre lot for Henri Gagnon adjoining the Dorchester-Canaan Town line, which deed called for a large rock on said Town line at a distance of 172 rods, which town line was obviously blazed and easy to follow, our only requirements being to locate this corner, supposed to be a large rock. From this description there would appear to be little chance to anticipate difficulty, but at the end of this measured distance there was no large rock. From New Hampshire law, "Bounds govern distances" and natural bounds are of the highest rank in the Order of calls. This large rock is a very natural bound. From these seemingly logical reasons, we proceeded more east on the town line three or four hundred feet to a beautiful large rock exactly on the town line, concluded to be the corner sought. Some say that in a game or crib, to always peg enough, if you take too much you will hear about it. This was not our motive, however, we felt that we had good, safe reasons. When my client began cutting wood there was a protest of trespass from his neighbor, and it then became necessary to work out the whole deed on the ground, which we did in the reverse, which brought the east line to cross the town line nearly at the given measurement, and in line with a large rock more than 100 feet beyond, or south of the town line. This proved to be the recognized dividing property line sine 1867 when this lot was owned by the Northern Railroad for its wood. This proves that established lines did not conform with descriptions as given in recorded deeds, or the laws of boundaries.

The State Road crew had occasion to check over my work on the undeveloped lots on Hough Street, and told me that I was 1.6 feet too long over a distance of 458.9 feet, and to whom should they give it? We looked it over together and began to measure from the angle in the street, a distance of 819.3 feet and came through long by 0.3 feet, not unreasonable, and easily adjusted. Their trouble being that their starting point was out in measurement 1.1 feet. It is always better to check all sub-division distances from an established recorded point and refer descriptions given in deeds to that same point as measured.

Before the Mascoma Savings Bank will submit a real estate loan they require a search of title back about 30 years to check any unpaid notes or undischarged mortgages, and expect from this gathered information that a property may be located on the ground.

In 1930 Burton Whittier handed me a similar search made by John Cronin of property on Highland Avenue owned by Katherine Wood to make a re-survey. After examination of the abstracts it became evident that there was absolutely no required data from which this land could be worked on the ground, and the resort to deeds of adjoining owners was the only possible solution, solely because of careless, incomplete descriptions.

In 1945, Raymond Trainor asked me to re-locate the property lines of the Lyric Theater in White River Junction. There was no detailed information given in the deeds and I immediately started a search of adjoiners when the owner, Alfred Graves, came along and said he was not interested in his neighbors' land and all he wanted was his own. I suggested that perhaps it might be better if somebody else should work out this land to which he readily approved. Some days later I happened along and saw Arthur Stone walking the land near the theater lot and could understand.

This was the only way it could be done and if Graves did not know what stone was doing he would be well pleased. It has always been my way to tell people what we think is best to do and why, which sometimes proves to be fatal.

It took over a year in White River Junction to complete one plan on Gates and South Main Streets including the Miller Auto Co., the garage of Dessie and Huber Kendall, Elks Club Inc. and other business blocks, that all started with the survey of one small property of the White River Bus Terminal. There was a stack of deeds like Bunker Hill Monument that David Pingree said he had made the best he could with what he had to go on, over a period of more than 45 years, and only for his excellent memory and personal letters

from Robert Fletcher and J.V. Hazen, both of D.C. Thayre School, some problems would have been impossible. I think I realized something less than $100.00 for this job completed in 1945, but learned a whole lot about White River Junction. While working for K.U.A. in Meriden, my note book shows in red ink: Received $75.00, Profit $20.00, Had a good time. I have never known of my help being dissatisfied either by usage or pay, and many times they make more than I do. I have been told more than once that I needed a manager.

In 1924, the sub-division of Mascoma Park was made into house lots, adjoining the railroad right of way, their fence was exactly three rods from their center line of location that we assumed to be the property line, and to which line, by measurement, the previous deed had been made. Naturally, with no further search of titles, we used this same line in our work, only to find later the actual width of the railroad land to be three and one half rods. I at once notified the owner who said his warranty deed from Maude McFee would clear him responsibly, but I have always told those who bought lots.

In 1926, I made two sub-divisions at Riverdale for Clarence Hibbard, administrator of the Susan Benton Estate, on the north and south sides of the Fourth New Hampshire Turnpike, with land of the Northern Railroad on the south. The exact location of the turnpike or highway, with a known width of four rods, could not be determined and was worked to a width of about 55 feet insisted upon by Hibbard, also the width of the railroad was uncertain, and not given its full width. Both of these tracts were sold by the acre, which obviously was a gain for the Estate. I don't think I was ever caught this way since. Present owners have been told. In 1939, the General Court amended that when the re-location of any highway could not be found, to measure one half the given width from the center line as now used, but to always save the full width as given in the original lay out.

Errors are human, but not to the extent to become incurable. I have sometimes wondered about the border line between right and wrong and just how much power there should be for those whose sole motive is some personal gain, or in that in-which they have no real knowledge.

I have never been a machine, and will do for nobody what I have reason to believe wrong, for which reasons I have walked away from more than one job, and am not sorry.

In a recent *Saturday Evening Post* a character is described as an animal-man who would do as told without intelligence to deviate from instructions.

In a deed of Lizzie Deuell adjoining Herbert Barden on Prospect Street, a distance is given of about nine rods, which measures to within about five feet of a good wire fence built by Deuell in 1918 to replace one decayed by age. There had been cultivation and acquiescence by both parties to this fence Barden claimed to the exact measurement of nine rods on Deuell, thus giving him the five feet beyond the fence and I walked away.

Dan Drury was employed who set a granite monument at exactly nine rods, just as he was told to do, and went back to Hanover with his award. But was no True land surveyor.

In 1931, while making plans for the Lebanon Water Works, there was a three quarter inch connection into a one and one half inch main, that Supt. Harry Manson refused to allow being shown on the plan which I never finished. Upon advise, both Thaddeus Merriman and Robert Kent wrote me, that plans should show absolutely everything that exists, and that such omissions were neither ethical nor within civic rights.

The Town of Lebanon owns one equal moiety in a tract of land out of which house lots have been conveyed, and in which I have been actively connected since 1922. Within a year Chairman, Selectman Perley failed to co-operate in the subdivision of these lots to conform with those on adjoining properties, that to me showed a benefit to all, and for which I declined to be responsible. It has been done, however, by those having no consideration for betterments, as they were told, causing serious errors forever.

Politics, doubtless has as great a power as any other one similar force, and for that same reason can become just as dangerous. It can even effect the laying out of house lots.

It is something that I have kept away from all my life, strange or wrong, (I have been charged with both) my name was never on the check list in Lebanon. Were I to advise a young person, I would say, it is not only your privilege, but your duty to vote.

More than once I have been told that I might as well do a job whether I believe in it or not and get my pay for it, because if I did not, somebody else would. That is the only time in my whole life that I ever felt rich, and no amount of money could induce me to do what I think to be wrong, even though there is no way to prevent this particular action to take place.

In 1930, when the management of Hotel Rogers was acquired by James O'Connell, I re-surveyed the property lines and made plans. He told me that my work did not compare with that done by Prof. J.V. Hazen in 1911 when the hotel was built. We checked over my reasons which appeared logical and which he accepted. The facts were that Hazen took the deeds to the property and worked the land by those deeds.

This property is bounded on three sides by laid out streets which when located will establish property lines to any adjoining land, Flynn Street having been later widened from its original lay out. After this was done, Hotel Rogers laid between these lines and that was all.

This result showed that the west entrance extends into Howe Street 13 inches, and there is an encroaehment for the entire east jet over land of the Town of Lebanon for which I have been unable to find any recorded reasons.

This rule is invariably true of land adjoining any laid out-street, highway or railroad lines, but many times bounds on a dividing property line are still found to exist within the limits of a street, and some owners are hard to convince they do not really own a part of that highway until shown where damage was paid to their predecessors in title in the records of the street lay out. Again showing proof, that regardless of the wording in a deed the exact location of a property line is never known until found on the ground.

During the summer of 1938, I worked 219 acres of land for Marian Carter in Meriden, whose south line joined land of Harry Carlson, conveyed to him by one Mary Camp, being a portion of her 60-acre lot. The Camp deed describes one course following the highway with a given distance of 1023 feet from a definite starting point, which extends by measurement, 185 feet beyond the boundary line of Camp into land of Carter, and to which Carlson claims ownership. Obviously, if this line of the Camp deed is properly determined, Carlson cannot own beyond it because it was not owned by Camp. Boundaries will govern distances, but Carlson does not agree, and holds this line in controversy. When a client is in need of a land surveyor to re-check his property lines, he expects the job to be done complete, and when done that it will hold. He would question his ability, if conflictions arise, and if the surveyor should suggest the advise of a lawyer. It may be 60% law before a surveyor unpacks his tools. Many cannot understand why if their deed calls for 75 feet, they should not have it, little thinking that perhaps others can have certain previous rights.

A man has only one dollar and gives "A" 50 cents, and agrees to give "B" 75 cents. It is often not easy to convince "B" who knows nothing about "A," that all he can have is 50 cents. Carlson asked Carter for her consent to build a fence on her land within which he could turn his cows for access to the brook, to which she readily and neighborly agreed. Carlson then constructed a substantial fourstrand wire fence straight to the point of measurement on the highway. Carter has prospective opportunities to sell, and has asked Carlson to remove the fence. Carlson is still "keeping cows."

It is always better and easier to keep people off your land, than to undertake to move them after they once get squat. This is one case that "good fences" do not make "good neighbors." It is always better to make in writing, a signed easement or agreement in any such transaction, even though it be your brother.

In 1940, Carlous Trottier owned certain house lots at Westend Park, Scytheville. In 1942, he Quitclaimed all of them to his father, Anatole Trottier. Then he, Carlous, began to Quitclaim these same lots out to three other parties, which could prove serious.

Some one of the three happened to discover the flaw in title, and came to me. Soon we all got together on the matter which was agreeably re-adjusted, thus saving him, Carlous, a possible bad legal tangle, in finding his original motive not to be wrong.

It is seldom if ever fully realized the empowered responsibility and duties that lay within the jurisdiction of a land surveyor, and his every day opportunities to help others. Some people speak of honest surveyors. I can see no other way. Every move must be open and with a reason that he is able to show. They talk of me both ways and I hear neither. Barnum said his friends and critics looked alike to him, Ford said he didn't care what people said, so long as they kept talking. We all know that the old Puritan told his wife that there were none honest except me and thee, and sometimes I think thee are a little wrong. A Judge has decreed that any one of experience can do the work well enough if they know what to do. Someone has said the three hardest words to say are "I was mistaken."

"I would rather people would like my work than me. It will last longer." SAMUEL STEVENS

Controversies in land surveying may be expected and are not uncommon. Especially is this true in village changes or improvements usually, until the job is completed and all see the betterments and are then willing to understand alike.

What probably was the worst controversy in Lebanon involved the location of .the first meeting house, unsettled until 1772. Poems of regret have been written upon the passing of the old town pump, watering trough, band stand, covered bridges and old public buildings as land marks of childhood memories. Such continual changes are essential for progress and must be accepted by all living, whether old or young. A few must sacrifice while others benefit. The change at Hough Square in 1946 to make it circular in form, was met with a storm of protests until conclusively shown to remedy a dangerous traffic hazard. Wilder Dam has been in the Courts for more than three years, but construction will begin in the spring of 1948. The Vermont and New Hampshire State line was in dispute for more than 100 years until finally established by Decree of the Supreme Court of the United States, January 8, 1934. At that time Special Commissioner Samuels Gannett wrote to Joseph Smith, Town Clerk of Lebanon, regarding the ownership of certain land in Wilder on west side of west shore of Connecticut River.

By good fortune, I happened to have a plan of this location made by Robert Fletcher, in 1880, before the first dam was built, replaced in 1926 by the present dam, which showed the information desired. From this plan the State Boundary line was determined and established, giving to Lebanon, N. H., land west of present west shore line, as unaffected by improvements on the river or by extreme droughts. But subject to such changes as may hereafter be effected by erosion or accretion. September, 1944, an interesting experiment was made at the site of the proposed Wilder Dam when the State boundary line was established in the presence of

both State's Attorneys, Town Officials and New England Power Association Engineers. This was during the period of an extreme drought and the mean flow of the river for the year previous was controlled to fix this State line, the power station being designed so that one generator will be located in each state, with a total capacity of 30,000 Kilowatts.

A surveyor is frequently asked the meaning of the words "about" or "more or less" as usually appear in an instrument for a conveyance. One answer may be, the land included within an established enclosure marked by recognized bounds at its corners. If I have two dollars and agree to give you one dollar, that is exactly what you should have because I have it and agreed to. If I say you may have what money I have in this pocket, about one dollar, and there proves to be only ninety nine cents, that is all you can have even though I have enough to make up the dollar, because I agreed to give you what was in my pocket. If I have fifty acres of land and deed you twenty acres, you should have it. If the deed is made by metes and bounds and is found to be within, a definite marked enclosure giving an area of twenty acres, more or less, which works out to be only nineteen acres, you can have no more. You can force me to show you the corners and you know where and what you are buying and can see it. To some, this is not a fair answer, and they will ask you, what is the limit? In a treatise on "The Surveyor and his Legal Equipment," by A. H. Holt, former Judge, in Iowa, he gives from his experience, a maximum of 8%, and any specified area to have the least weight in the order of calls. Any given area is, after all, only the result of computed measurements which must close on the ground, and may vary from those given in deeds. If a distance is given as about, it is usually taken to any existing recognized marker even though the measurement may vary in either direction.

Measurements given in deeds of Guy Snoman and Henry Wadsworth on Shaw Street are all given to be more or less. In 1932 I uncovered an ancient stone bound on the dividing line between their properties 8 feet from where either expected it to be. Jesse Dewey, on Green Street, a prominent business man, had deeds to cover only 70 feet of his 108.9 foot frontage until we worked it out in 1933. Florence Hoyt in Enfield, in a conveyance from Amoskeag Savings Bank, 1939, was short 7% on her frontage, as given in deed. This deed does not mention about, or more or less. If a distance is given as about 200 feet, and the marker has been destroyed, I would place a new marker at exactly 200 feet, unless evidence on the ground showed different, such as marked trees or timber lines, cultivation both sides to a fence or a stone wall. Evidence as found on the ground will usually prevail. It sometimes requires "horse sense" and always best to contact your neighbor.

September, 1943, I worked land in Groton, N. H., for William Kimball, conveyed to him by the Federal Lumber Co. to be Lot Numbered six, Third Range, Third division, to contain 125 acres, more or less. These range lots were known to over run in area, and generally considered to contain, as shown in previous deeds, 125 acres. This one lot was the intent in this conveyance, and what Kimball expected to buy and no more. He had this lot run out by his surveyor, who told him there was exactly 100 acres. He then appealed to the United States Land Court for the District of New Hampshire, that decreed him 25 more acres of land, "so as to make it certain that not-with-standing certain words mentioned in said deed, to wit, 'more or less' that said Kimball, shall actually have by verture of said deed and his conveyance 125 acres." An increase to the grantee of 25%. He then sent for me to find his 25 acres. One definition for the duty of a land surveyor is, to do that which a competent and well-advised Court would decree. Out of curiosity, I measured around this lot No. 6, and am certain that it contained more than 110 acres, and would interpret more or less to mean just what it says, (more or less) which, to be neutral, could apply in either direction. One can never know what a Court or Jury will do. I told Kimball we were better friends than as though he had sent for me before this decree.

Many strange and queer descriptions in old deeds have been found in the records and used in titles over a long period or years. They were made when land was of less value and people were not so careful, or perhaps envious, about their boundaries, but become an unsolved puzzle when found today.

They can cause us the same weird feeling as when we see funny epitaphs on old tomb stones. They all had their specific meaning that was understood by them for what was intended in their own common ways. Land was traded or exchanged among neighbors much the same as their animals, without a thought of any record. It was not uncommon for a man to give his son land to use and keep, mutually between themselves. There was, no doubt, less trouble then over property lines than there is today.

The first surveyed line in New Hampshire was the old Masconian Curved Line run by Joseph Blanchard in 1751.

Kenneth Andler found this old deed:

Bounded on the north by brother Jim:
On the west by brother Bill:
On the south by sister Sal:
And on the east by mother.

Carl Johnson has a deed that describes, "Easterly to the first water bar on Slack Hill."

The only description as given in deed to Ned Smith is, "One half of Lot No. 17."

The northern boundary of land in Gilbertville in 1832, "run from said rock in the river to point on said road where Con. Kelley's horse broke his leg."

Another began at place where Wilber Barrow had corn last year. A deed in Exeter, N.H., made in 1638, was signed by an Indian Chieftain by a picture of a man holding a raised tomahawk.

There are always jokes and incidents

of Lawyers and the Courts:

A woman witness when asked to give the earmarks of a rabbit replied, It has a very short tail.

A railroad train killed a farmer's cow for which the farmer offered three dollars settlement.

A lawyer in defence for a boy who had killed his father and mother, asked leniency because he was an orphan.

The old, but maybe true one, of the argument between St. Peter and the Devil, when St. Peter went looking for a Lawyer and couldn't find one.

There was the prospective juror who, when asked by the Court if he had any scruples of conscience against capital punishment, replied: "Not in this case."

The above case of Kimball is self-explaining: Whether by reason of error or otherwise by the surveyor, the Court was not "well-advised" and therefore not "competent."

Benjamin Franklin said: "Love your neighbor, but pull not down thy hedge."

The mention of land boundaries are frequently found in the Bible:

Deut. 19:14… Thou shalt not remove thy neighbors landmark, which they in old time have set.

Prov. 22:28… Remove not the ancient landmark which thy fathers have set.

Prov. 23:10… Remove not the old landmark: and enter not into the fields of the fatherless.

Job 24: 2… Some remove the landmarks: they violently take away flocks, and feed thereof.

In the summer of 1932, I established a True Meridian on the Basin at the Bank Street High School, from the angles made by observation on Polaris at eastern and western elongation bisected. This line was checked by R.W. Hooper, of Durham, in 1935, and found to be N. 0° 0' 30.7" E. or about 29/32 of an inch east, over a distance of 482.3 feet. Local Magnetic attraction was found to exist, thus causing this line useless from which to determine magnetic declination.

Stay tuned for the rest of Samuel Henry Stevens' "Experiences and Incidents," which will appear in the summer 2018 issue of *The Cornerpost*.

REMEMBERING AN OLD FRIEND
Russ Brown, L.S., sent in this photo from Dwight Baker's memorial service. Dwight, Vermont L.S. 317, passed away last October.

Measuring a Distance by Taping

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

I don't like to think of myself as old, but I am. I have been surveying for close to 50 years. The difference between how I used to survey and how surveying is done now is different. This difference was brought to the forefront of my thinking one day when I was surveying with a young surveyor.

As we compared the distance we measured between two corner monuments to the distance set forth in the original survey performed in 1968, the young surveyor was appalled that the original surveyor was off six tenths of a foot between the two monuments. Until this young surveyor spoke, I was thinking that the 1968 surveyor had done some exceedingly good measuring given the fact that the distance between the monuments was almost 2,000 feet across uneven landscape filled with puckerbrush. My young associate had never used a tape to measure a long distance. Had he done so, I think that he too would have marveled at the accuracy of the 1968 surveyor.

I would be surprised to hear that any surveying firm operating at this time still tapes long distances. If there is some firm that still practices this ancient art, surely they cannot compete on a fee basis with another firm.

So my young colleagues in the profession will better understand how the boundary they are now retracing was measured, I will reminisce about the lost art of taping a long distance.

Taping required at least two people in the survey crew. Three were ideal, with a person on each end of the tape and one person on the instrument to keep the two people on a straight line between the end points.

My employers at the time were somewhat tight-fisted with expenses, so most of my taping was done with one other person.

With the direction to be measured selected, a distant object was chosen to use as a point of reference to guide us while taping. I suppose when taping across open land, a pole was included as part of the survey equipment. The pole was placed in the ground on line with the direction to be taped and used to guide the taping crew. Where I surveyed there was always some natural object that could be used or an appendage of a tree or bush where ribbon could be hung to serve as a guiding point.

Unless we were in farmland or urban land, there followed some physical labor, as brush and other vegetation was cut and removed from the direction to be taped. Of course if the distance to be taped was part of a traverse, the direction of the traverse was often selected so as to avoid the denser portions of vegetation, thereby saving a great deal of physical labor involved with cutting a traverse line. If memory serves me, I seem to remember more time spent cutting a clear a line in preparation to taping the distance than actually measuring the line.

My employer favored a 200-foot steel tape. Most surveyors employed the standard 100-foot steel tape. I heard of a few surveyors that employed a 300-foot steel tape. The longer tape meant fewer markings on the ground that I shall explain later. However, the longer tape made a wicked sag unless extra tension could be exerted on the ends of the tape to reduce the sag. Of course the extra tension made plumbing the tape more difficult. Still, I came to appreciate the longer tape and used it when I first practiced on my own after becoming licensed.

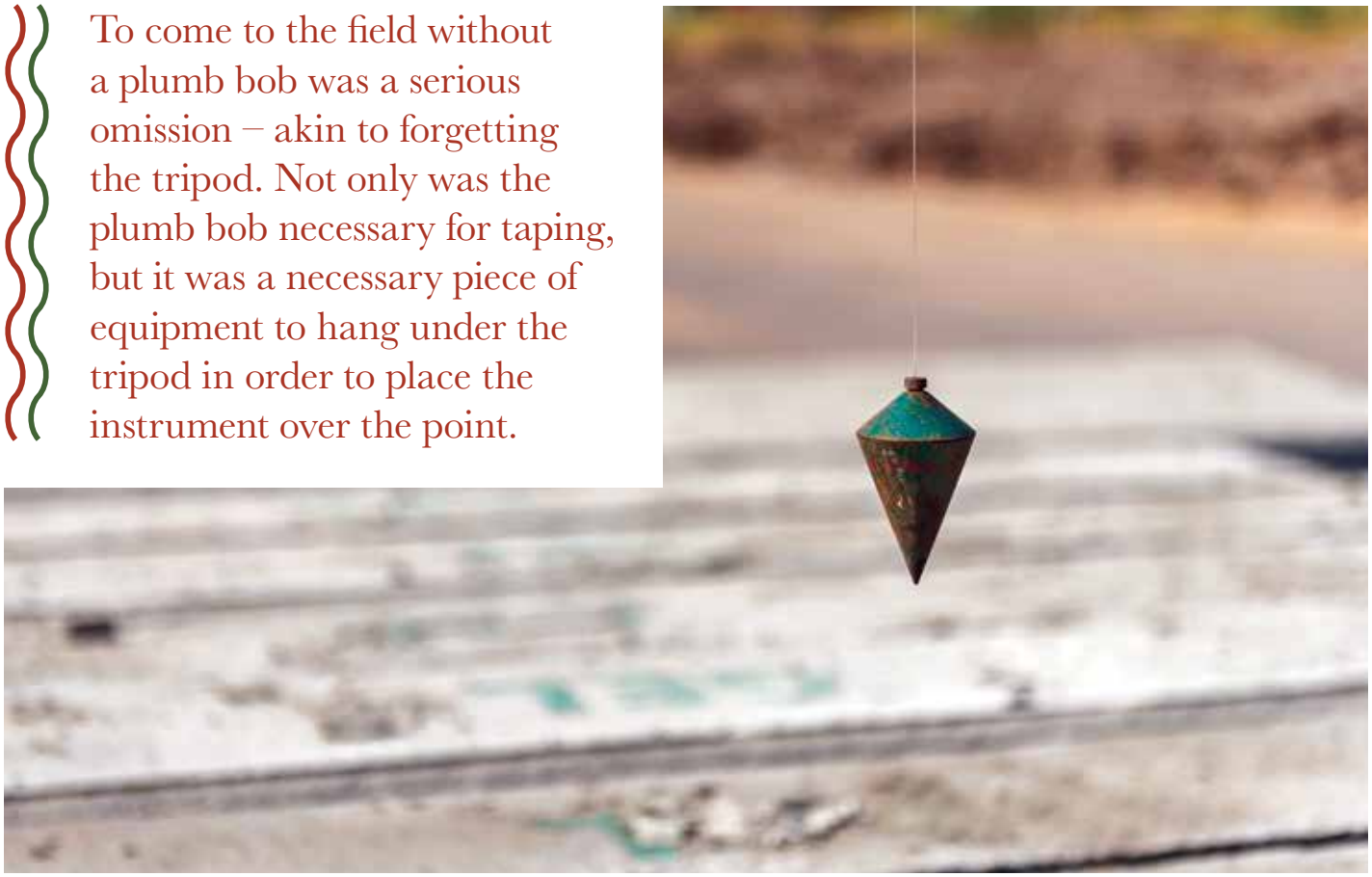
Now I will say here and now that I was well familiar with tape corrections such as sag, tension, and temperature. We never made those corrections, nor do I remember a surveyor that I met at this time that did so, though they were common subjects in academic learning. I do not believe these calculations were omitted from ignorance. It must be remembered that calculations during these times were done without benefit of an electronic calculator. As a result, any calculations involving multiplication and division were a tedious undertaking.

Also, the errors associated with the failure to make tape corrections were often as not dwarfed by other factors present in the boundary survey. Would a temperature or sag correction to the steel tape make much of a difference when the corner monument was a 22-inch diameter tree or a three-foot diameter stone pile?

My employer did deem it important that the taping be done on a straight line and as near to horizontal as possible, unless the end of the tape could be placed at the instrument allowing a vertical angle to be read and used to reduce the slope distance to a horizontal distance. I do not remember ever employing a hand level to check to insure the tape was horizontal, the level of the tape being accomplished

So my young colleagues in the profession will better understand how the boundary they are now retracing was measured, I will reminisce about the lost art of taping a long distance.

To come to the field without a plumb bob was a serious omission – akin to forgetting the tripod. Not only was the plumb bob necessary for taping, but it was a necessary piece of equipment to hang under the tripod in order to place the instrument over the point.



by a fair estimate with the eye.

Leveling the tape required a plumb bob be suspended from at least one end of the tape and usually at both ends of the tape. Even on relatively level ground it was necessary to suspend the tape above the ground and employ plumb bobs, or else the tape would weave up and down over brush we had cut, fallen trees, stones, and high grass that was normally present on the line of taping.

I don't believe a plumb bob can be found among the equipment of the modern surveyor. Perhaps it may be found buried in the equipment box on the survey truck yet. The plumb bob does not hang from the belt of the surveyor like it did decades ago. To come to the field without a plumb bob was a serious omission – akin to forgetting the tripod. Not only was the plumb bob necessary for taping but it was a necessary piece of equipment to hang under the tripod in order to place the instrument over the point, the optical plummet not being present on transits and compasses that were used to measure directions at that time.

Beginning at the instrument, the tape was laid out in the direction to be measured. Perhaps laid out is the wrong word - for the procedure was to grab the 'zero' end of the tape and drag it in the direction to be measured until the rear tape person would yell "stop" or some other recognizable command. Now in doing this simple task it was important that someone watch the tape or at least be sensitive to the resistance to the drag offered by the tape to prevent the tape from looping upon itself where continued tension would cause the loop to collapse and the steel tape to break. Careful observation was especially important when turning the tape back upon itself. Breaking a tape would cause the ire of even the most placid employer because there was no reason for this event to occur but for negligence. I am sure some survey crew members did try their best to think of some other plausible excuse that would explain a broken tape and not attach blame to themselves.

Having dragged the tape to its farthest extent without causing the tape to break, the forward tape person would be directed to the right or left by the rear tape person, so as to cause the forward tape person to be on a straight line between the two points where the distance was required. This is where the pole or point of reference spoken of earlier assists the taping crew.

More times than not it seemed this simple task would reveal that the forward tape person had passed on the wrong side of a tree or bush, requiring the forward tape person to drag the tape back to the offending tree or bush and pass on the correct side of this transgressing vegetation. Surely if the tape did not kink or break in laying the tape out, the risk of a break by kinking the tape increased with this realignment, because the forward tape person was looping the tape back upon itself and was now agitated with the extra effort necessary to make the measurement. In their frustration they would tend to pull on the tape harder than good practice should allow.

In some instances, it would be

determined that rather than drag the tape back and go on the other side of the offending vegetation, the vegetation could be cut and removed. This idea was good in theory but often fraught in practice. More than once I have seen a good swing of the machete or brush hook designed to cut the offending brush not only cut the brush but go on to cut the tape as well, the tape being next to the offending brush because of the circumstances I have mentioned.

It was always a discussion among survey crew members whether the employer will think the intelligence of an employee to be less if they broke the tape with an overlooked kink or the result of a powerful stroke of a machete. Thankfully that is one conversation and confession that will no longer occur with modern survey practice.

Once satisfied the tape is aligned properly in the direction of the survey, the tape would be raised off the ground in a manner to effectuate a level line. In raising the tape, the taping party often discovers that the recent maneuvering with the tape has allowed the tape to seep under some brush that had been previously cut in clearing the line and allowed to remain in the vicinity. The discovery of the offending vegetation occurred when an effort is made to raise the tape and one or more pieces of brush would also rise with the tape. At this discovery some vigorous attempt is made at shaking the tape to throw off the offending brush. This effort seldom worked other than to jerk the end of the tape out of a person's hand.

With the failure of shaking the brush off, it became necessary for someone to once again walk along the length of the tape and remove offending pieces of brush that had found their way to laying on the tape rather than under the tape.

If a person is following this story and is counting the trips along a particular segment of line, they will realize that the distance of the tape has probably been walked three or four times. First, a person must walk the line to cut a clear sight along the line. Second, a person will walk the line to drag the tape to set up the measurement. The third walk occurs when retracing the steps in order to come back around the correct side of a tree. Finally, the fourth walk of the line is to throw off brush and vegetation that has climbed on the tape. I know that vegetation can't move or climb on its own but if you had been there you would swear it does just that.

Finally, the tape could now be raised off the ground to effectuate as near as possible a horizontal line that could never be a straight and level line since the weight of the steel tape always caused a sag. To remove some of the offending sag, tension had to be applied to the ends of the tape. I suppose there were surveyors that employed tension handles in the field that allowed the tension, measured in pounds, to be carefully applied to the tape's length but I have never met the field crew that used them in the field doing a boundary retracement survey. Perhaps a diligent survey firm would have had at least one tension handle in their office in order to show a new employee what 15 to 20 pounds of tension felt like.

For those surveyors that have never seen a tension handle, a close similarity can be visualized by thinking of certain weight scales with a handle at one end and a hook at the other end that are sold to fisherman to weigh the trophy fish they plan to catch. I suspect that some of the survey tension handles that were purchased by surveyors were used more often for weighing fish rather than applying tension on a tape.

With the tape raised off the ground, great skill must now be employed to do several tasks at once. The tape person had to keep the tape level, at a consistent tension, and steady enough to fix a point on

the ground using a suspended plumb bob.

The rendition of these tasks in print does not begin to describe the difficulty of combining these tasks in practice. First, the plumb bob string must remain fixed and immovable on a mark found on the tape. This requires one hand be employed to clamp the plumb bob string securely to a mark etched on the steel tape. The other hand is employed pulling on the end of the tape to keep a constant and desired tension. It must be remembered that the steel tape is a smooth ribbon but for some minor roughness caused by marks on the tape surface indicating feet, tenths and hundredths of a foot. The last two mentioned etchings only present at the ends of the tape. The combination of the tension, tape smoothness, and liberal sweat on the hands resulting from the physical labor involve in surveying at the time and the reader can deduce the challenge required in making a measurement while exerting tension on the tape. Usually a leather thong at the end of the tape was used rather than holding the tape itself. A consistent tension was employed by tucking the hand next to the body and leaning the body in the direction away from the other person in order to render the desired tension.

> It was always a discussion among survey crew members whether the employer will think the intelligence of an employee to be less if they broke the tape with an overlooked kink or the result of a powerful stroke of a machete. Thankfully that is one conversation and confession that will no longer occur with modern survey practice.

Where a leather thong was not present or "breaking the tape" required, often as not the tape person would grab hold of the tape and bend the tape down at their hand to afford a better grip – much as a person would do when pulling a rope to get a better grip. This grip often left a "jog" in the tape at the completion of the measurement. After years of usage, a tape would no longer lay flat but would have rises and dips along its length that would be coupled with a few points of extra thickness where the tape had been repaired.

Let me pause in my rendition of taping to state that when I speak of 'breaking the tape' in this instance, I am not speaking of physically breaking the tape. Rather the phrase was used to indicate the entire length of the tape was not to be employed in making the measurement required.

Long ago, some entrepreneur invented a tape clamp. The tape clamp was a handy little gadget that allowed the user to firmly secure the tape with the clamp using the two finger rings that were part of the clamp. Using the finger rings, the tape could be easily pulled without bending of the tape or permitting a slippage along the tape.

I doubt much money was made from the invention. The survey firms that had purchased this gadget were likely as not to leave it unused in the office. When brought to the field, it never seemed to be with the tape person that needed it.

Having mastered the combination of holding the tape level, keeping pressure on the tape, and keeping the

plumb bob string firmly attached to a mark along the tape, the tape person could now focus their attention to the suspended plumb bob that was likely as not swinging over the ground much as a lookout does in a crow's nest over a ship in rough seas. Restraining the plumb bob from wild gyrations required the tape person to periodically tap the plumb bob into the ground until the swinging of the plumb bob settled down.

The person at the rear of the tape had a mark that the plumb bob had to be over. When he was satisfied that he had wrestled the plumb bob and by extension the appropriate part of the steel tape over this point he would repeatedly shout some agreed upon term to the forward tape person to let that person know that a measurement could now be reliably made by the forward tape person.

I have seen the patience of the rear tape person sorely tested by the inability of the lead tape person to make a timely mark or reading. The rear tape person will make repeated statements of "good" or "mark" to indicate that he is over the point and the measurement can be made. After some repetition, the rear tape person will become agitated by his own endless repetition and may be heard to stop the repetition in order to yell: "god damn it, I'm good at this end. What is taking so damn long."

If the forward tape person was not measuring to a previously established point, they would tap the plumb bob point onto the ground to make a mark in the dirt, having previously kicked away grass, leaves, and twigs to clear a space on the ground. Once the forward tape person was satisfied the mark made by the plumb bob point represented a fair measurement, they would release the tension in the tape and put a pin into the ground at the mark. This pin would become the basis for the rear tape person to advance upon and measure over.

My employer was a kindly man but did not feel justified in purchasing equipment that was not absolutely necessary. Rather than using chaining pins, as they were commonly known, to fix the limit of the tape measurement, we would use nails or sticks with flagging tied to the end of the stick.

Having marked the length of the tape on the ground, the forward person would drag the tape in the direction of the survey to begin again the process of making the next measurement. The rear tape person would follow with the other end of the tape. Now if the rear tape person was not paying attention, they would likely as not kick the pin or nail out of the ground before they spotted it. If the rear tape person did a good job of kicking the pin loose from the ground, the taping would have to begin anew back at the starting point with numerous expletives used against the rear tape person for not paying attention to where they placed their feet. To avoid repeating the process of taping or bringing upon themselves embarrassment and attracting the ire of the other crew members, more than one rear tape person made a best guess where the pin may have resided before they inadvertently kicked it out. If possible the misfeasance was corrected without the forward tape person realizing what was being done.

I should mention that had the forward tape person measured into a mark or corner already fixed, his job was a little more difficult. Rather than stick a pin, nail, or stick in the ground, he had to find a way to maintain the tension, keep the tape horizontal, maintain a steady plumb bob over the point, and read the marks on the tape at the plumb bob string.

This was done by firmly clasping the plumb bob string over and on the tape using the index finger and thumb and sliding the string along the tape until the plumb bob was over the desired point. The tension was then released while still keeping a firm grasp of the string on the tape. Once all the other distractions were eliminated, the forward tape person could peek under his thumb and see what incremental hundredths of a foot mark the string was held upon.

At this point it is worth mentioning a problem that has plagued surveyors using a tape or chain for a couple of centuries – keeping track of the whole lengths that are used when measuring between two points. When a survey crew measures long distances, it is necessary to tally the number of full tape lengths used. Now it would be wise for a crew member to make a mark in a field book each time a tape length is achieved. What is wise and what was done are two different things. If field books were not available putting notches on a stick or moving stones or acorns from one pocket to another was employed. Despite the best efforts, there are numerous distances where a tally was lost or added that should not have been.

I have alluded to a plumb bob suspended from the tape to the ground. The term "suspended" is only accurate after some effort is obtained to stop the plumb bob from swinging in arcs over the ground. It is not possible to get a plumb bob to hang from the tape to the ground without some swinging. The plumb bob was determined to be contrary when let loose to hang. There were times when the plumb bob was stationary but not vertical as in the case when it had to be dropped from chest height and there was a strong wind blowing across the open field. It seems to me that the wind was usually combined with cold temperatures. To all the other problems I've alluded to in trying to keep the plumb bob steady over a mark must be added the lost sensitivity of the fingers when using gloves and the shaking of the body from the cold temperature.

Eventually, the plumb bob was finally settled into compliance by tapping the plumb bob upon the ground until finally the tip of the plumb bob was confined to a small area meeting the tolerance of the tape person. Of course before the tapping could take place, the forward tape person usually had to expose the ground by kicking away sod, sticks, leaves, and other debris using the toe of his boot. This often accounted for the delay that caused the agitation of the rear tape person that I have previously mentioned.

I must not close this reminisce on taping before adding a few more tidbits that provide some added insight into taping practice.

Many tapes were not marked or inscribed like a more recent steel tape or the fiberglass tape still found in the surveyor's tool kit. What I mean is the tape did not contain marks to the hundredth of a foot along the entire length of the tape. The old tapes were only marked every foot except for the very end of the tape where the tenths and hundredth of a foot marks could be found. This necessitated the rear tape person find a whole foot mark to hold to and the forward tape person use the end of the tape to measure the increments of

a foot. To set this up involved the forward tape person yelling back to the rear tape person to 'take a foot' or 'give a foot.'

While on the subject of marks on the tape, I must state that dragging a tape along the ground for days, weeks, and years often succeeded in smoothing the tape and erasing the stampings of the whole feet and making the marking of whole feet difficult to read. More than once I had to look up or down the tape to find a readable mark and work my way back to the mark I was to hold at in order to know what whole foot I was holding at.

I have about exhausted my memory of taping but for three situations that are often encountered. One situation is the delicate taping required when taping through an electrified cow fence with a steel tape. I need say no more on that topic as the reader can well imagine what often happened. I must add that in addition to the electrified wire, once the survey crew has cleared the electric fence and entered the field, the reason for the electrified wire becomes obvious. Curious cows tend to congregate about the surveyor and become a hindrance in the taping process. However, I suppose a curious cow or heifer is far better than the bulls I encountered from time to time that took offense at the red often worn by the surveyor.

The second situation not fondly remembered is taping upon a concrete or asphalt surface. Since such surfaces were often flat and without obstructions, the tape was laid flat on the surface. Tension was put on the tape ends during the measurement with knuckles touching the asphalt or concrete. In such cases one tape person usually released their tension unexpectedly with the result that the other tape person often left some skin from their fingers on the rough surface of concrete or asphalt.

The third situation that still can incite bad dreams occurred when taping across a busy road or sidewalk. You did not have to experience this situation in order to imagine the peril of a tape suspended above the road surface when a car is observed much too late traveling down the road. Dropping the tape quickly to the road surface would often preserve the tape. Yet, there is many a time the survey crew returning to the office with a broken tape that claimed this very event to be the cause of the broken tape. Of course, there was nothing they could have done to prevent this happening. At least that is what they claimed.

I have about exhausted my memory of taping but for three situations that are often encountered. One situation is the delicate taping required when taping through an electrified cow fence with a steel tape. I need say no more on that topic as the reader can well imagine what often happened.

I will close this reminisce by speaking about securing the equipment used in taping. The tape was coiled with attention paid to making consistent sized loops. The tape was then thrown. I don't mean heaved to the side. I mean that the tape was made into a figure 8 then into a compact circled loop using a twisting of the hands. Throwing a tape was an art that was often done at a surveyor's convention to show prowess. If a person did not know how to throw a tape it turned into a wrestling match where the tape refused to cooperate and often as not ended in a jumble rivaling any fishing line tangle. If the person did know how to throw the tape, a person watching would have the unmistakable impression that a magic trick just occurred. One minute the tape is in a large loop and the next it is neatly coiled in a compact loop.

The other item of equipment deserving some effort at storage was the plumb bob. To see a plumb bob being stored with the string hanging loosely from the end of the plumb bob would reflect poorly on the owner. At some point, another inventor came up with a gammon reel that wound the string up unless the owner resisted the urge of the gammon reel. Before the gammon reel arrived at the scene, a plumb bob string would be carefully wrapped around the head of the plumb bob and a slip put into the string to hold the string in place. A carefully tug on the string would unwrap the string from the plumb bob. A knot in the plumb bob string spoke of an untrained crew person. A knot was akin to a hang nail on the finger – it's presence always felt and always hanging up at inopportune times.

Keep this rendition of the taping process in mind young surveyor before disparaging that old surveyor that taped those long distance one small segment at a time.

November 16, 2017 · 6 p.m. · AIV Building, Montpelier

The meeting was called to order at 6:09 P.M. In attendance were Gayle Burchard, Mark Day, Lisa Ginett, Nate Yager, Ian Jewkes and our Administrator, Kelly Collar. Absent: Brad Holden and Keith Van Iderstine. We were also joined by John Adams of VCGI who spoke to us about the VCGI survey.

VCGI DIGITAL SURVEY:

The VCGI survey is designed to gauge interest in the VCGI parcel mapping program, which would create a statewide digital repository for the parcel mapping of all Vermont Towns. There was some discussion about whether the repository would be at VCGI or the State Archives. This repository might contain the surveys that are the basis of the parcel mapping and, if so, this might solve our problem as to the scanning and archiving of our old maps. If the maps came under the authority of the State through VCGI's parcel mapping program, they could go into the State Archives. The process would be driven by the State Parcel mapping program and the separate parcels would be identified by their unique SPAM numbers. The survey was to be sent out to the VCGI list and they were hoping to send the survey out to the VSLS list. We reviewed the survey and had a lively discussion about many of the questions. The Executive committee agreed to be a co-sponsor of the survey.

SECRETARY'S MINUTES:

Minutes for the Executive Committee meeting dated October 26, 2017. Upon motion duly made and seconded it was unanimously RESOLVED: to approve the minutes of the October 26, 2017 Executive Committee meeting.

TREASURER'S REPORT:

Treasurer's report for the period Jan. 1 to Nov. 15, 2017:

Total income for the period is $60,752.32, total expenses were $66,920.66, for a net income of $-6,168.34. The bank account total is $53,096.36. The spring seminar brought in about $4,707.34 and usually brings in around $6,000. The year's budget is off due to the unanticipated expense of renewing our State of New York education sponsorship with the State Education Board so that NY surveyors can get license renewal credit for our seminars, as well as donations and higher than expected travel costs to NSPS. Our donation cost was also higher due to our Boy Scout donations and disaster relief.

The group discussed various ways to raise membership dues to cover these cost and give the Executive Committee some working capital for small initiatives. We need to discuss the raise in dues with the membership at the next Spring Seminar so that the raise can be warned in the September "Cornerpost" and be voted on next December. Kelly will review expenses versus dues in the past. VSLS is paying less for speakers and no longer pays rent for an official office but Kelly is earning more income that our last Administrator. It was also noted that engineers now need continuing credits for licensure and that perhaps we could put on a joint seminar, though that would mean splitting costs and might not lead to any gain for the Society.

ADMINISTRATOR'S REPORT:

Kelly will be mailing the next "Cornerpost" on the following Tuesday. She reports that Seminar reservations are coming in quite slowly. She will try to get the dues notices out in early December as they should be due on January 1 of next year. Kelly is trying to get the Program Committee going on the spring (and fall) seminars.

OTHER BUSINESS:

Brad did not have time to get the video scripted, as his area was out of power for several weeks. Becky Gilson has agreed to be on the Executive Committee, and Paul Hannan says that he would join if no one else wanted to take the position from the floor at the Annual Business meeting in December.

There being no other business, the meeting was adjourned at 7:39 P.M.

The next Executive Committee meeting will take place on January 18, 2018 at the AIV building in Montpelier so that we can meet face to face with our new members.

Respectfully submitted,
Lisa Ginett, VSLS Executive Committee Secretary

Attention!

Executive Committee meetings are held on the third Thursday of every month. All members are welcome to attend. Email kelly@vsls.org for more information.

January 18, 2018 · 6 p.m. · AIV Building, Montpelier

The 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 and our Administrator: Kelly Collar. Absent: Paul Hannan. Also attending were Tricia Kules and Pete Chase.

MAURICE WINN'S SURVEY RECORDS:

Pete Chase attended the meeting to inform the ExComm that he and Pete Franzoni had attended Maurice Winn's funeral in 2012, where Maurice's daughter spoke to them about her father's records. The outcome was that the records were donated to the VSLS, as Maurice had been a long time member of the Society. Pete and Pete later retrieved some of Maurice's equipment, which was auctioned off at a VSLS event, and his plats, maps and written records were stored in Pete Franzoni's basement. At this time the records need to be moved. Ryan Downey, L.S., from Dorset (the region where Maurice worked), is interested in obtaining and storing the records. Ryan had offered to scan and index the records and make them available for the use of the VSLS membership, with the provision that we would need to have an agreement between Ryan and the VSLS Executive Committee to leave the physical records in the possession of Ryan. Upon motion duly made and seconded it was unanimously RESOLVED: to allow Ryan Downey to keep Maurice Winn's physical records, belonging to the VSLS, at his office, provided that the VSLS ExComm and Ryan Downey sign a mutual agreement regarding the records and also that Ryan scans and makes the records available to the VSLS membership.

SECRETARY'S MINUTES:

Minutes for the Executive Committee meeting dated November 16, 2017 were reviewed. Upon motion duly made and seconded it was unanimously RESOLVED: to approve the November 16, 2017 Executive Committee meeting minutes.

TREASURER'S REPORT

Treasurer's report for the period Jan. 1 to Dec. 31, 2017:

Total income for the period is $66,856.07, total expenses are $73,800.18, for a net income of $-4,944.11. The bank account total is $57,012.09. A lively discussion ensued regarding how to raise enough funds so that Society is not running in the red. It would appear that we need to collect at least an additional $4,000.00 a year in order to meet our budget. It was suggested that in order to cut costs we should cap our donations and also could go to a one day only Fall Seminar, which would cut mainly the cost of the supper at the end of the first day, which Kelly says is very expensive. It also has been noted that we should not allow people to go to Life Membership status unless they are retired, not just because they have reached retirement age. As it is now, we have a large number of members that are obtaining that status but still working full time.

We also discussed membership dues, as it is clear that they need to be raised. In 2013, when we voted to have a portion of our dues go to NSPS membership, dues were raised to $150.00 per year; however, the Society had a net loss of $15.00 per member, because the NSPS dues are taken out of the VSLS dues stream. Tricia and Gayle, having recently attending the NSPS meeting, informed us that NSPS was also contemplating a raise in dues in the next year of $10.00. We will need to provide some basic facts regarding the need for raising the dues to be put into the March "Cornerpost." We can discuss the dues increase with the membership at the Spring Seminar and vote on it at the Fall Conference, so that when the dues notices go out in early December for 2019, they will reflect the new dues amount.

ADMINISTRATOR'S REPORT:

Kelly has processed around 75 membership renewals to date and has another 50 or so on her desk. She is planning ahead for the next "Cornerpost," with an article due date of February 6. The Spring Seminar will be on April 20 at Lake Morey, with Tim Patch and Ray Hintz as presenters.

Becky suggested a second track for our seminars for the technicians. This might allow for more attendance by technicians paid for by their employers. Becky suggested a more basic type of class such as how to run a level loop taught by any VSLS member who might be inclined to volunteer. It was noted that we would have to ask the Board of Registration if the teacher of any courses for technicians could receive the same amount of continuing education credits received by other attendees. Otherwise people teaching the tech courses would lose their PDU credits by teaching those courses.

OTHER BUSINESS:

Brad Holden said that he is planning to meet the videographer to continue work on the VSLS video.

VCGI survey results were reviewed but there was little discussion. John Adams of VCGI will attend our next meeting to discuss those results.

Tricia commented on the NSPS memorandum for the State of Vermont. Each state receives a tailored memorandum. Tricia mentioned that there is an official NSPS Lobby Day relating to national issues. She thought that the only NSPS issues relevant for Vermont might particularly be the Light Squared Issue, which could affect GPS band widths nationwide.

There being no other business, the meeting was adjourned at 7:30 P.M. The next Executive Committee meeting will take place on February 15, 2018 at the AIV building in Montpelier.

Respectfully submitted,
Lisa Ginett, VSLS Executive Committee Secretary

VSLS Annual Business Meeting • Dec. 15, 2017 • Capitol Plaza Hotel, Montpelier

The meeting was called to order at 1:01 P.M. Attending were the general membership as well as Executive Committee Members Gayle Burchard, Mark Day, Keith VanIderstine, Lisa Ginett, Brad Holden, Ian Jewkes, Nate Yager and our Administrator, Kelly Collar.

SECRETARY'S MINUTES:

Several sets of minutes were published in Volume 48, Number 3, Fall 2017 "Cornerpost." They included the April 21, 2017 VSLS Business Meeting minutes. Upon motion duly made and seconded it was unanimously RESOLVED: to approve the minutes of the April 21, 2017 Business Meeting.

TREASURER'S REPORT:

Treasure's report for the period of Jan. 1 to Dec. 14, 2017:

Total income for the period is $ 68,700.11, with expenses at $72, 072.43, for a net Income of $-3316.41. The bank account total is $56,290.21. A question was raised from the membership about the $1,500.00 attributed to bank fees in the expense report. Our VSLS Treasurer stated that the amount was related to bank fees for use of credit cards to pay for seminars and dues.

NSPS DIRECTOR'S REPORT:

Tricia Kules, who has just completed eight years as our NSPS Director, reported that it was NSPS election time. She commented that while both candidates would do an excellent job, it might behoove us to vote for the candidate from New Hampshire as the colonial states are poorly represented in the NSPS. She also mentioned the plat contest.

VSLS OFFICERS:

Brad Holden noted that, according to our bylaws, we should first vote for our Standing Committee chairs before our vote on new members for the VSLS Executive Committee. The only Standing Committees vote was the NSPS Director. Tricia wants to retire from the position. Gayle Burchard offered to stand as the candidate unless there were any other nominations from the floor. There were none and Gayle was voted into the position of NSPS Director, which is a four-year term. The officers' slate was approved as published in "The Cornerpost," with the addition of the final member nominated from the floor being Paul Hannan. It was moved and seconded by the membership that the Secretary cast one ballot for the entire officers' slate. Officers were installed by VSLS guest Robert Dahn of Connecticut.

The membership also voted on the Education Foundation Board. Mark Day, Nate Yager and Lisa Ginett are on the Foundation Board, as is Pete Chase, Mike Raboin and Norm Smith. The one member not present, Norm Smith, was voted onto the board again. Mike Raboin commented that he would be retiring next year and someone would need to step up to his position.

NEW PRESIDENT'S REMARKS:

Mark Day touched briefly on our ongoing research into scanning and indexing old surveyors' records. He asked the membership to fill out the form that Kelly had provided up at the sign-in table if they had any old surveyor's records in their possession. He also discussed dues sustainability. Mark noted that in 1996 the Society had 150 full members and that in 2017 we had only 89 full members. Dues for full members in 1996–2009 were $100.00. They are currently $150.00, but $40.00 of that amount goes directly to NSPS. We need to discuss raising membership dues moving forward.

OTHER COMMENTS:

Paul Hannan got up to speak briefly about his collaborations with Leslie Pelch of VCGI. The membership knows that Leslie has been very supportive of the VSLS, giving countless presentations at our Round Table discussions and seminars on her favorite subject, GIS and other VCGI-related topics as they relate to the State of Vermont and our profession. At the request of the VSLS Executive Committee Paul, conferred upon Leslie an honorary life membership with VSLS.

David Mann thinks that we should be more inclusive with membership and perhaps add GIS to our bylaws as he thought that surveyors should have a greater understanding of GIS. Harris Abbott thinks that we should have a fairly accurate spreadsheet showing the various costs of scanning and indexing the old surveyors' records before we vote on a membership dues increase. Dan Martin wondered why the life membership number is down from the 1996 figure. It was pointed out that we had 234 members in 1996 and now have 202 member; there were 20 life members in 1996 and currently there are 44. Someone questioned the amount of active surveyors today versus 1996, but that figure was unknown. Rick Bell discussed bringing in younger members by lowering the dues rate or conference attendance fees. As we were running late the discussion was tabled.

There being no other business, the meeting was adjourned at 1:39 P.M.

The next Executive Committee meeting will take place at the AIV building in Montpelier on January 18, 2018 at 6:00 P.M.

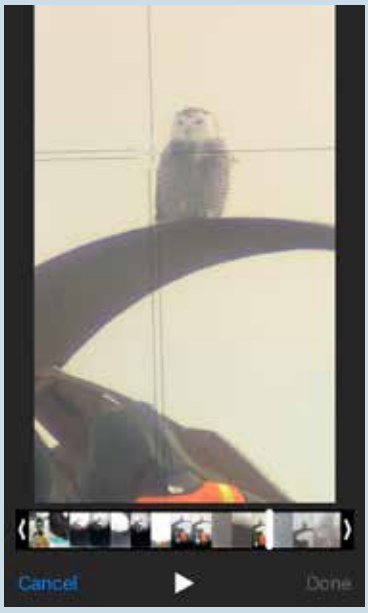
Respectfully submitted,
Lisa Ginett, VSLS Executive Committee Secretary

HISTORIC PRESERVATION

One springtime in the early '80s, Andy Dussault, L.S., was photographed holding a buggy rim that was in place before the maple tree started growing. Note the second rim at the bottom of the tree. "Apparently the two wheels were set down many years ago," Andy said. "The tree started growing, the wooden portions of the wheels deteriorated, and the hubs are probably in the trunk of the old maple." The photographer was survey technician Bill Evans, a longtime employee at Truline.

UP AND COMERS

This photo from the summer of 1985 shows employees from Truline Land Surveyors conducting a topographic survey for a waterline project in North Hyde Park, Vermont. The surveyor on the left is none other than VSLS Executive Committee Secretary Lisa Ginett, L.S., during her first summer working for Truline. On the right is Andy Dussault, L.S., who provided the photo.



CAPTURING A RAPTOR

John Diebold, L.S., sent in these photos from a surveying lab he taught late last fall at Vermont Technical College. Students took these photos of a snowy owl that happened onto the scene. "They were innovative," John said, "Using their phone to take the pictures through a total station."

{ a surprise on stannard mountain... }

BY DICK BOHLEN, L.S. #7, *retired*

WALTER SCOTT ran a dry cleaning business on Eastern Avenue in St Johnsbury. He was also the owner of a large tract of land on the eastern slopes of Stannard Mountain in Stannard, Vermont. The westerly bounds of this parcel bordered the State of Vermont property, and the boundary lines there were well marked with blazed and painted trees. Most of his other bounds were marked with stone walls or wire fences, but there were some questions about other of his boundary lines, and he contacted me to help him locate those lines.

Bob Hovey was my helper back then in the early 1950s, and he and I met Walt to work on the survey. Walt owned an Army surplus jeep that saw service in the second World War. This rig was not the most comfortable to ride in, but it was great on the old logging roads on the mountain. Walt, Bob and I piled in the jeep and headed for the bounds in question. I remember that we were involved with doing the survey work when we spotted what looked like a parachute hanging on a tree! WOW!

These were the days of the Cold War, so a parachute on Stannard Mountain had to mean that a Russian spy was here in Vermont doing sabotage work. What to do? Well, we are patriots, and the Army or State Police needed to know about this find.

Believe me, it was a careful, quiet, sneaking threesome that approached that surprise on the mountain. We were pretty sure that at any minute we would be surrounded by Russian para-troops appearing from behind the trees. We finally got to the "surprise" without any incidents and found that it was not a parachute, but a balloon up in that tree, and there was a basket attached.

In the basket we found an alarm clock with wires attached, a battery, and an electric device, and a tin container about big enough to hold two gallons of liquid. The container smelled something like formaldehyde. Yes, and there was a note also that told us to call a certain number immediately when we found the basket, and that we had found property that belonged to General Mills Laboratory of Michigan. The note said that there would be a reward for whoever found the property.

There seemed to be a sense of urgency, so we pulled down the balloon and carried everything back to Walt's jeep and headed for his business in St. J. The phone call revealed that the whole thing was part of a study of wind currents, weather conditions, and times to determine how to get balloons over East Germany that would drop leaflets to the East Germans! We were to send the contents of the basket to the General Mills folks. They didn't want the balloon!

Walt put all of it in his window for about a week for people to see, and then sent it on to Michigan. We soon got a check for the reward, of $50. That didn't go very far for three guys!

"These were the days of the Cold War, so a parachute on Stannard Mountain had to mean that a Russian spy was here in Vermont doing sabotage work."

Spring Seminar

7 PDH APPROVED

Friday, April 20, 2018 • Lake Morey Resort, Fairlee, Vermont

PROGRAM SCHEDULE

7:15 AM Registration & Continental Breakfast

8:00 AM GPS for Boundary and Construction Surveys

12:00 PM Luncheon & Business Meeting

1:30 PM Managing a Large Project, from Soup to Nuts

4:30 PM Concluding Remarks

REGISTRATION FEE	Through April 10	After April 10
Member in Good Standing*	$150.00	$175.00
Non-Member	$200.00	$225.00
Life Member	$112.50	$137.50
Non-member technical staff attending with member	$127.50	$152.50
Three attendees from same firm (one must be member)	$127.50	$152.50

*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

GPS for Boundary & Construction Surveys (4 PDH)

Presenter: Raymond Hintz, University of Maine

Ray Hintz will discuss surveying with GPS technology and consider questions including:

- How do we know we have a good location with one lonely shot?
- What do all the numbers associated with the shot really mean?
- How does one know they have a good value?
- How about a Least Squares Adjustment using GPS data?
- Does taking 12 shots on the same point within the same window of time amount to anything?
- Should we be doing boundary surveys with GPS data points?

AFTERNOON SEMINAR

Managing a Large Project, from Soup to Nuts (3 PDH)

Presenter: Tim Patch, Principal, SGC Engineering, LLC

Tim Patch will cover all aspects of large project dynamics, including client interaction, proposals, project startup, communication, collecting data, managing data and so on. Tim will explain how to make it all work and end up with a successful project that's financially beneficial and leaves a happy client.

Overnight rooms: $129/night plus tax. To reserve, call (800) 423-1211 and mention the VSLS Seminar.

Registration (please complete this form and mail it with your payment, or register online at **vsls.org**)

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