

The TBM Newsletter of the NHLSA

Volume 22 Issue 9

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by the

**New Hampshire Land
Surveyors Association**

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NSPS

Affiliated with the National Society
of Professional Surveyors

"What is Love by Billy,
age 4. Love is when
Mommy puts on perfume
and Daddy puts on
aftershave and then they
go out to dinner and
smell each other."

~ Anonymous



Photo courtesy of Paul Dobberstein

Looking northeast from the summit of Mt. Washington, a rare clear day.

Deadline for Advertising and Articles

The TBM Newsletter of the NHLSA is published monthly.
Copy and ad deadline is the 1st of each month.

Inside this issue:

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Professional Land Surveyor



Horizons Engineering, Inc., a regional engineering, surveying and environmental services firm with offices in New Hampshire, Maine and Vermont is seeking a qualified candidate for a Professional Land Surveyor located in our Littleton, NH office.

The applicant must have a minimum of ten years' experience in performing land surveying tasks including land records research, boundary reconnaissance and field surveying, existing conditions, topographic and construction surveying and all related office computations and computer assisted drafting skills, with a minimum of four years in a supervisory position or as a solo operator providing professional land surveyor services. The applicant should be licensed in New Hampshire (or an adjoining state with the ability to become licensed within one year in NH) and demonstrate the ability to produce estimates and budgets, prepare contracts and manage surveying staff and projects. A valid driver's license and suitable transportation and capability of working out-of-doors in urban, rural and wooded/mountainous environments is required.

Benefits of the position include:

- Rural work environment and quality of life;
- Competitive salary and medical benefits;
- Paid vacation and sick time;
- Company 401k;
- Continuing education support; and
- Supportive work environment with ample opportunity for career advancement.

Our staff at Horizons Engineering, Inc. is a close-knit group of hard-working individuals that value client service, design innovation, and a no-nonsense approach. The successful candidate will have a strong work ethic, desire to learn, and interest in working on a wide range of surveying projects throughout Maine, New Hampshire and Vermont.

Interested Candidates should forward a resume and cover letter to:

Human Resource Manager
Horizons Engineering, Inc.
34 School Street
Littleton, NH 03561

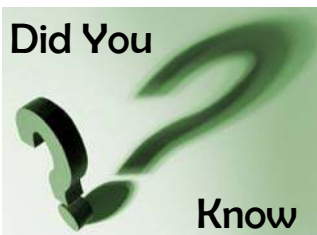
Or via email at: hrmgr@horizonsengineering.com

Horizons Engineering, Inc. is an equal opportunity employer.

For more information on our firm check us out at www.horizonsengineering.com.



Did You



NSPS Stolen Equipment Registry

Please provide the following information by email to:

trisha.milburn@nsp.us.com

1. Description of Instruments including Serial Number
2. Location where equipment was stolen, include nearest Town and State
3. Date stolen
4. Contact person to provide information, include phone and/or email

We're Hiring!

→ Survey Crew Members ←

We are seeking Junior & Senior Field Positions!

TFMoran, Inc. is looking for Survey Crew Members to work for our Bedford, NH Survey Department. Our Survey Department runs multiple field crews on a year-round basis and uses the most current field equipment and software. The position would include office work as well as work in the field.

JUNIOR & SENIOR FIELD CREW POSITIONS

Do you want to join an award-winning, well established, progressive company that promotes respect, collaboration and have a passion for giving back to the community?

Do you have 3+ years of experience in a Survey Field Crew?

Then... Express your interest in joining our team by submitting your resume to:

TFMoran, Inc.

c/o Maryanne Murray

48 Constitution Drive Bedford, NH 03110

FAX: (603) 472-9747 or Email: mmurray@tfmoran.com

EOE



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Letter from the Editor

At the August Executive Committee meeting, Mark Condodemetraky made a great suggestion for a new feature in *The TBM*. He suggested that we have an opinion piece in each, or close to each, issue commenting on an issue relevant to land surveyors and others involved in the profession. I am hoping that these pieces can inspire readers to send in their thoughts on the issues raised in the opinion pieces and a dialog can be established that we can build on. I think we all know there is no shortage of opinions within the Association! I have taken the honor from Mark (with his acquiescence) of writing the first of these opinion pieces in this issue.

Readers are encouraged to send in their own opinion pieces for publication and to send their comments about what they read. One important criterion for these pieces for those wishing to submit, these are opinions related to land surveying or directly thereto. This is not a forum for political, cultural, or religious commentary. Let's get talking about the issues that you are passionate about and no one else in your life cares about or understands! Let's give our spouses, kids, and dogs a break from feigning interest in the issues that get us riled up!

Acknowledging the Importance of Paraprofessionals in Land Surveying

By Paul Dobberstein, LLS

What is a paraprofessional? Merriam-Webster defines a paraprofessional as "a trained aide who assists a professional person (such as a doctor or teacher)." The website <https://www.dictionary.com/> defines them as "A person trained to assist a doctor, lawyer, teacher, or other professional, but is not licensed to practice the profession." Paraprofessional is the word I choose to describe non-licensed members of the surveying profession. For me, this includes rodmen, crew chiefs, SITs, office personnel, etc. Traditionally, these people have been called technicians, but that is not how I see it.



I argue that for Land Surveying as a profession to be viewed on par with Professional Engineers, Architects, and other licensed professionals we work within the eyes of the public, we need to stop thinking of these critical employees as technicians, they are not. Some may say that referring to a non-licensed individual as a paraprofessional vs. a technician is merely semantics. I argue that it is not semantics, that rephrasing and rethinking of non-licensed surveyors as paraprofessionals will help our profession in the long run.

Like many of you, I have several non-licensed individuals who work under my supervision. Some are strictly field crews, others a mix of field and office, and some strictly office personnel performing deed research, drafting, etc. The people under my supervision must have my utmost trust and respect with regards to the tasks they perform, after all, it is my license on the line and my name on the final plan. I must trust that they will perform their work diligently, professionally, and properly in the field. I must know that they are competent at performing research. I need confidence in their ability to properly draft a plan resulting from good field work. I need to know that they know what they do not know, and to know when to come to me for assistance or direction. This confidence in their ability to *perform* as professionals, while not being a licensed professional, is key to responsibly being in responsible charge. Some of these people seek to be licensed one day, some do not have a desire to take that extra step or the added responsibility. Any Licensed Land Surveyor who does not perform every job themselves from field work to finished product must rely on one of these people to independently perform part of the process and to do it as well as they would. Appreciation for the skills, dedication, and conscientiousness of our "technicians", in my mind, is key to the elevation, respect, and recruitment of the next generation of the surveying profession.

Recognizing the importance of surveying paraprofessionals has several aspects. One, very naturally, is the wages paid. How many of you can find competent help? Do we really think we can get that talented field or office person to work for \$18/hr.? Those of the older generation are in for quite a surprise when they hear what recent college graduates in engineering are expecting to be paid. In some cases, I am sure it is more than some of you make or pay yourselves. This is not because they are greedy, it is because, in my opinion, of two factors. First, they have massive student loan debt. If you have to make a \$1,200 student loan payment every month and not live at home, you better get paid. Second, they belong to a profession with prestige and stature in our society. When is the last time you heard an individual straight out of a civil engineering program called a technician? I do not know if I ever have. They are viewed within their profession and society as just professionals learning their craft, they are paraprofessionals!

On the flip side, I have a crew chief who has been doing field work for 20 years, can do field work better and faster than I ever could, knows way more than he realizes, and is referred to as a technician. He has specialized knowledge, knows how to apply it, understands legal concepts of surveying, and most importantly, understands the sacred trust that we share and what it means when I stamp field work he performed. *I cannot perform my job to the level which I do without him.* In my mind he not only deserves the wage of a professional, he and others like him deserve the respect of the *Land Surveying Profession*. We must pay these valuable and skilled employees what they are worth, and pay them a wage that will actually be attractive to young people thinking about entering the profession.

This brings me to my second important change that needs to be made to acknowledge the importance of paraprofessionals in land surveying. I was having a conversation with the same crew chief I mentioned above and I asked him what we, as an Association, could do to get folks like him more involved. Paraphrasing, he told me that he doesn't feel like he is given any reason to be more active. He's not allowed to vote on issues within the Association, there aren't workshops and seminars that are directed toward him and things relevant to his everyday work, and there seems to be a general lack of respect for the "grunts" by us who are licensed. I cannot argue with his point of view and I think we can do better. Surveying paraprofessionals have just as much skin in the game as licensed professionals do. This is their career, they are committed to the profession and the betterment of it. When the paraprofessionals I work with come across sloppy work by other surveyors, see something that impinges on our defined role, or violates statute and ethics, they are just as incensed as any of you would be. They see it as a denigration of all their hard work, just like we as licensed individuals do.

Additionally, there are several changes that we can implement within the Association to alleviate this problem of perceived exclusion and elevate paraprofessionals to the stature they deserve. First, we need to have a mechanism to allow for unlicensed individuals to become Active members within the Association. The input the practicing paraprofessional can provide will give different perspectives, broach new issues of concern, and allow for a broader, more egalitarian nature to the Association. Why would they join the Association, attend meetings, and participate in furthering the profession when their voice cannot be heard? We should enfranchise our paraprofessionals. Second, we need to set up seminars and other professional development opportunities for unlicensed individuals. They have the same desire to better themselves at their profession, learn new skills, and interact with other likeminded individuals that licensed professionals do. Third, we need to recognize and celebrate the outstanding work that these paraprofessionals do. Yes, we have an Outstanding Survey Technician award, but from my perspective, it is usually given to people who are about to get their license or are expected to do so shortly. When is the last time there was an acknowledgement of the contribution to the profession of someone who is in the field, rain or shine, snow or wind, every day interacting with the public and being the face of the profession?

The importance of surveying paraprofessionals needs to be recognized. This is their career. They deserve to be paid fair wages that are commensurate with their importance in what we do. They need to have the same professional development opportunities that licensed individuals do. They need to be allowed to actively participate in the professional organizations that represent their chosen profession. This is why we need to call them paraprofessionals, they have earned the right to be recognized and treated as such.

NHLSA WELCOMES NEW MEMBERS FOR SEPTEMBER

ACTIVE

Michael Hammer, LLS 1036
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Manchester, NH 03103
603-472-4488 (o)
mhammer@tfmoran.com

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732 Cross Country Road
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CDMKZschmidt@gmail.com



**Been There, Done That:
Another Tale From A Country Land Surveyor
"Marlborough's Attractive Nuisance"**

By Edward Goodrich, Jr., LLS 677

I grew up in a Marlborough neighborhood where almost all the children were boys. We never had a problem getting enough guys together to make two whiffle ball teams. The small field we used was at the Stone family house, across from Piedra Fina. That was before the driveway to the house out back was made. We played most afternoons until dusk. Our problem was lights; we didn't have them. Whiffle balls were white, that helped extend the game a little past dusk, but night games were out of the question.

Our ball games kept us busy and out of trouble, that is unless you speak of our out-field. The Boston Red Sox had their Green Monster for the end of the playing field, we had the Black Road. When the wind was right, and you had a good hit, reaching Route 101 was an almost guaranteed home run.

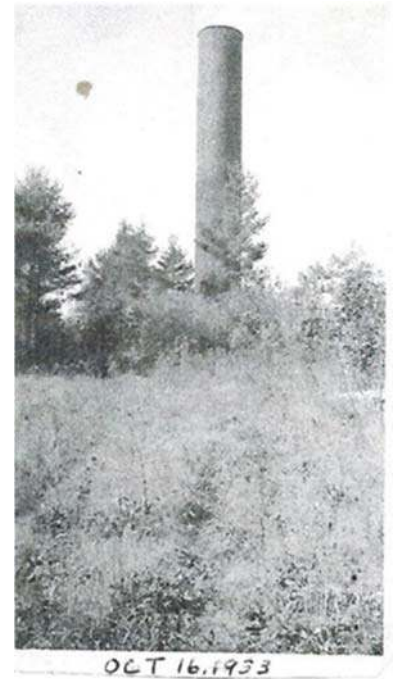
There was nowhere near the number of cars and trucks moving on 101 back in the days of Ted Williams and Carl Yastrzemski. It would be crazy to do that today, or is that just my now adult mind calling the shots. Parents and adults in general have always had an authoritative message for kids when there was a dangerous element in childhood recreation. As parents, we try to keep them safe, I know that ours did back then. Kids have always tried differently.

In 1923 an attractive nuisance was built in Marlborough. The intent was to provide convenient electricity to provide light in the darkness and make industry and all domestic work easier. The side effects amounted to a special highway, an out of the way fishing and swimming place and a rite of passage for adventurous children for years to come.

The Ashuelot Gas and Electric Company was one of many small electric companies scattered around the State of New Hampshire in 1923. They acquired lands in Marlborough to construct a 200' long, 60' tall concrete dam with an 85' constant radius arch bowing upstream. They also purchased the land for the powerhouse, water rights, and rights of way to build the penstock. The penstock was a 48" diameter pipe to carry water downhill. The intent of the penstock was to generate electricity from the pressure of the water flowing into it diverted from the Minnewawa River.

The Keene Gas and Electric Company bought out all the rights from The Ashuelot Gas and Electric and built the project. Public Service Company of NH soon absorbed many of the smaller companies in 1926, including our Keene Gas and Electric. PSNH operated the Minnewawa hydroelectric site as a peak output facility until 1968. Two Marlborough men, Mr. Richardson and Mr. Hendrickson, as I remember, were the local men tending the site at the station.

The dam was built in an isolated part of town, accessible only by the Boston and Maine, Manchester and Keene Railroad. The supplies for building this marvel were brought in by train to a siding track built at the site. The water was then piped through the 48" diameter penstock. The penstock meandered through a steep gorge on trestles and then into the woods for 6000' downhill to the powerhouse where the turbines were close to 270' lower than the water entering at the penstock's beginning. The penstock, constructed of redwood staves held together by iron rings, was supported every ten feet by a concrete cradle foundation.



OCT 16, 1933

**The Surge Tower, courtesy of the
Marlborough Historical Society**



Construction of the Dam in 1923, courtesy of NHDES Files

The 270' head of water provided an amazing amount of force, a force so great that a surge tank had to be built at the top of the last drop to the powerhouse. This 13-foot diameter steel tank stood 80' high and would absorb the excess pressure when needed. It also had a steel ladder running up one side, part of the attractive nuisance thing.

Children for generations used the penstock as a highway to reach the dam. Parents considered it dangerous, especially when traversing through the gorge where a misstep meant a plunge down on to sharp rocks. We kids saw it as a challenge. Many happy days were spent carrying my backpack containing a water canteen and my P&J sandwich with my fishing pole in hand walking the 48" diameter trail with friends.

When you walked the penstock, you had to get off at the surge tank and again at the two valve sheds. You also had to climb over the concrete encased elbows when sharp angles were needed when the penstock went around corners in the gorge.

The surge tank was a destination for shorter trips. Many kids had their first cigarette there. Many kids had their first taste of beer there. The best part of all was the famous ladder! The ladder that went up the side of the surge tank. Reaching the top of the tank was the prize, better than any double dog dare you could dream up.

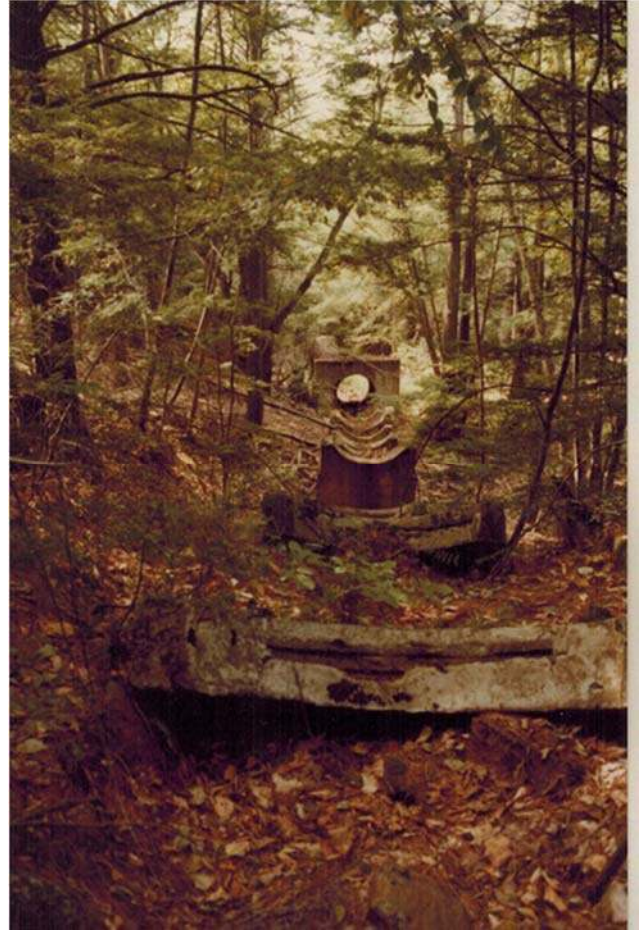
Now it took two people to do the ladder. One to help lift the climber to reach the bottom rung to begin the ascent, and of course to witness the rite of passage achieved. I feel confident that there are many readers right now who recall this daredevil accomplishment.

Changing times, markets, and accidents ended the Minnewawa Station in 1968. The powerhouse was sold, the penstock ripped out and the surge tank came down. The dam remained, but only filled with water during high rains. The swimming place was gone. The fishing pond was gone. The childhood adventure trail and tower were gone. What would kids do to prove their mettle without the surge tank now?

In the late 1970s there were oil embargos and energy shortages, hydropower was making a comeback. I was hired to survey the dam and penstock route for an engineering company hoping to rebuild the station. Second childhood here we come.

The deed study work was routine; the field survey work, anything but! We spent a couple of weeks in the gorge alone, locating every support concrete pad and cradle, getting horizontal and vertical positions on it all. The dam was measured for thickness, 4' wide on top expanding to 10' wide at the riverbed. To this day I am happy that OSHA didn't pay us a visit when we were working there.

Today it's a great walk on the old railroad bed to see the dam and pond once again. It was very exciting when we ventured out to the dam after the October 2005 rains and saw the water making a 200' long waterfall over the top of the dam. The sound was incredible. Years ago, my grandparents told me that the water was up to the railings during the hurricane of 38. Probably a bit louder.



The concrete penstock cradles, Ed Goodrich



The old penstock through the gorge, courtesy of the Marlborough Historical Society

Continued next page

Eventually, Marlborough Hydro Associates, Inc. acquired many of the rights and lands and reconstructed the Minnewawa Station. They did not get the rights to many of the historic storage ponds upstream: Howe Reservoir, Seaver Reservoir, Silver Lake, and Chesham Pond. Public Service Co. conveyed them to the State of New Hampshire and they are now managed by the NH Department of Environmental Services.

I am pleased that the site is being properly maintained and back working. Ashuelot River Hydro, Inc. is now generating enough electricity to power 1000 homes. Now with the rebuild, the penstock being only 42" in diameter, not the historical 48", and alas, there is no new surge tank / tower. I have decided to put off walking the penstock.



The old penstock at the dam, courtesy of the Marlborough Historical Society



Ed & Gilda surveying the penstock in the gorge, Ed Goodrich

Old Ads with Surveyors

Now that's how you sell a razor. Tell them it's as precise as a land surveyor, I'd buy one. I can't quite make out the copy text, but the first line is "Fortunes are marked on the accuracy of his figures when the surveyor plunges through uncharted trails with transit and level." Man, we got a lot of love back then!

Photo courtesy: Alan M. Barnard, LLS



THE SATURDAY EVENING POST

MEN WHO KNOW STEEL PREFER THE VALET—MEN WHO KNOW FACES PRESCRIBE IT

A little more precision

VALET

A lot better result...

FORTUNES are marked on the accuracy of his figures when the surveyor plunges through uncharted trails with transit and level. In laying out a railroad or mapping new territory—as in most activities—a little more precision means a lot better result.

Share with the new Valet blade and you shave with a fine precision instrument—built to exacting standards. Electro-magnetic and magnifying mirror inspection—revealing the slightest flaws—ensures freedom from imperfection in the finished product.

Extreme care in manufacture has won for Valet the positive professions of metallurgists and dermatologists. Prescribed for the prevention and relief of skin disorders caused by harsh shaving—this blade is pronounced a triumph in steel by qualified experts. The new Valet blade is made exclusively for the Valet Auto-Stop Razor and never needs removal for stripping or cleaning. Learn how Valet shaving helps keep your skin young and your face clear. Buy Valet blades today—and the razor if you haven't one.

The new blade can be identified by the word "Valet" cut through the steel.

VALET Auto-Stop
RAZORS AND BLADES



2021 Map/Plat Competition - Information coming soon

2020 MAP/PLAT WINNERS

Maps will be uploaded as they are received

NSPS is pleased to announce the winners of the 2020/Map/Plat Design Competition and expresses its appreciation for all who participated. NSPS also wishes to thank the judges for their dedicated efforts.

Subdivision Plats

- First Place Scott Hewitt - Grothman & Associates - Wisconsin
- Second Place Michael Houser - Pennsylvania
- Third Place Scott Hewitt - Grothman & Associates - Wisconsin

Boundary/Cadastral Maps

- First Place Aaron Kelsay, EHRA, Inc. – Texas
- Second Place Aaron Windels, Hugh Thompson & Robert Rinfret - DJ & A - Montana
- Third Place Kevin Young - Kevin Young Land Surveying - New York

Topographic Maps

- First Place Aaron Kelsay, EHRA, Inc. – Texas
- Second Place Ben Shinabery - Qk4 - Kentucky
- Third Place Lucas Davis - Windrose Land Services - Texas



ALTA/NSPS Survey Maps

- First Place Aaron Kelsay, EHRA, Inc. – Texas
- Second Place Lucas Davis - Windrose Land Services - Texas
- Third Place Timothy Guisewhite - Guisewhite Prof. Land Surveying - North Carolina

Miscellaneous Maps

- First Place Shane Rousey - Donaldson, Garrett & Associates - Georgia
- Second Place David Honnick - Ravi Engineering & Land Surveying - New York
- Third Place Daniela Cetean - Control Point Associates - New York



Hi Barb, thought this might be something you can use in an upcoming Newsletter for a little fun.

You know you're getting old when..... You see a Lenker Rod in an antique shop and you know how to use it!

Jim Diorio



Good Morning Barbara –

Below is an email I sent to SSB staff this morning regarding CE requirements for designers and installers. As you will see in the link in the email from the Governor’s office, designers and installers are now exempt from obtaining CE credits for this renewal cycle.

Please pass this along to your members who may be interested.

Hope all is well.

Rob

Robert A. Tardif, P.E., Administrator

Subject: FW: Exhibit Q to EO #29
Importance: High

Folks –

The link below is to “Exhibit Q” to EO 29 exempting designers and installers (and others within the Waste Management Division) from needing CE credits for this renewal cycle. I will be working with Jim Martin to send an email blast to all designers and installers and to also put out a press release. I will also be sending this to GSOWA (GSDI) so they can distribute it to their members.

Please spread the word as you speak with people throughout your day.

Thanks

Rob

Robert A. Tardif, P.E., Administrator
Subsurface Systems Bureau, Land Resources Management
Water Division, NH Department of Environmental Services
P.O. Box 95
Concord, NH 03302-0095
Phone: (603) 271-2904
Email: robert.tardif@des.nh.gov

From: Crepeau, Adam <Adam.Crepeau@nh.gov>
Sent: Tuesday, September 8, 2020 5:35 PM
To: Pelletier, Rene <RENE.J.PELLETIER@des.nh.gov>
Cc: Scott, Robert <Robert.R.Scott@des.nh.gov>
Subject: Exhibit Q to EO #29

Commissioner,

Linked [here](#) is Exhibit Q to Emergency Order #29.

Best,

Adam J. Crepeau
Policy Advisor to Governor Christopher T. Sununu
Email: Adam.Crepeau@NH.gov
Phone: 1-603-271-2121

Surry/Westmoreland Town Line

Shared by David A. Mann, LLS



I Found It—Now What Is It?

This month’s item was sent in by Mark Stevens. I am sure that some members will know what it is right away, and some of us will have no clue! Send your answers (or guesses) to Barbara at info@nhlsa.org.



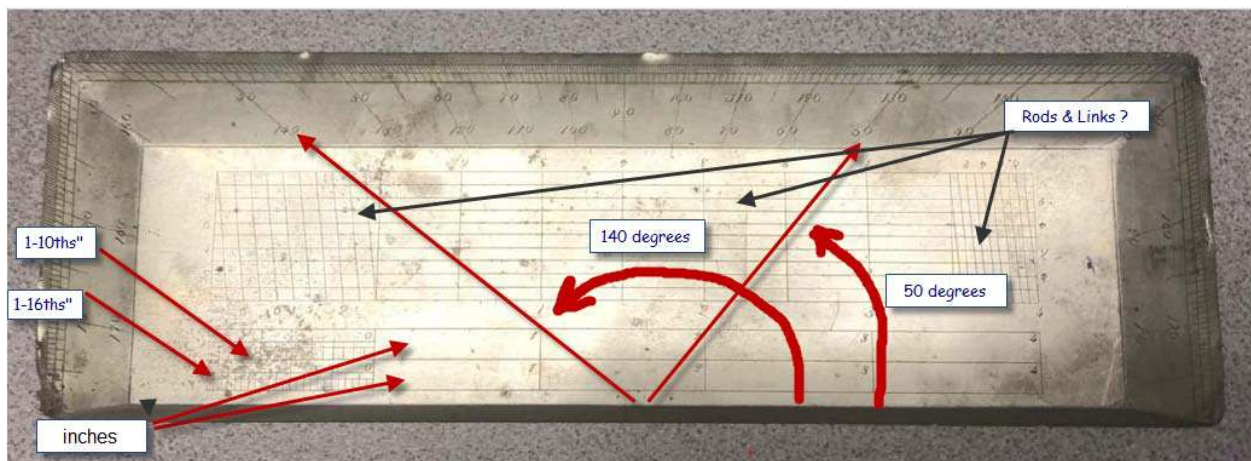
I Found It – Now What Is It? Responses

We received only one response for last month’s mystery item. Thanks for your submission Brian. We’re always looking for new items. If you come across something unusual, whether you know what it is or not, send it to Barbara at info@nhlsa.org.

Barb:

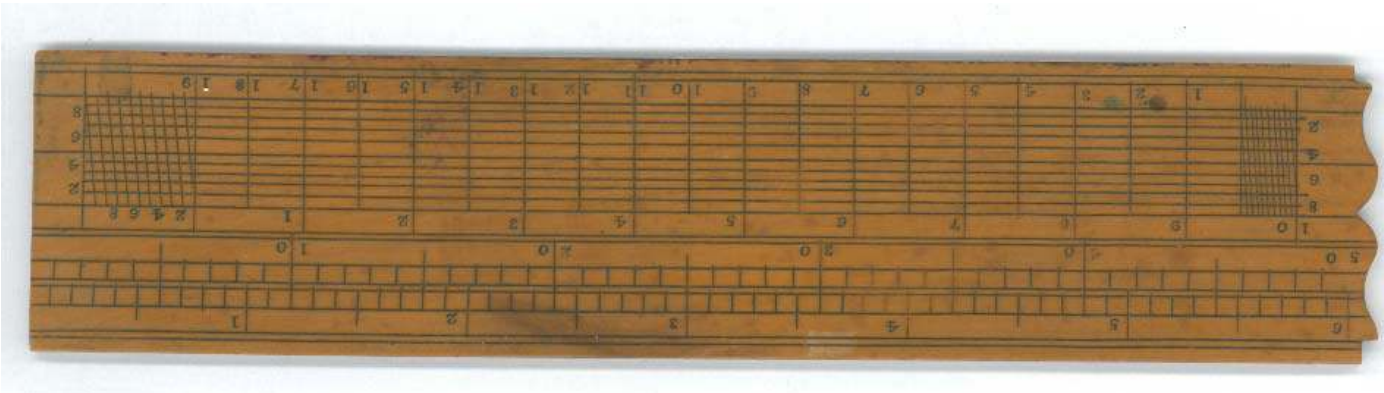
I enjoyed the August TBM, as usual. Ed Goodrich has some interesting stories. And Alan Barnard’s advertisements are great. As for the dastardly deeds, I say Kudos to the scrivener for including that distance BUT MORE IMPORTANTLY for including his/her source for the information.

I am not certain about the I FOUND IT but when I worked for Bob Todd, Bob had some plastic scales that the August FOUND item reminds me of. Bob’s scale was plastic, and we used them to draw sketches in the field books. I think this is a surveyor’s scale and drawing compass in one small package for use in field mapping. Around the three beveled edges are the degrees marked off. There are different scales on the flat part for distances. I am not certain, but I strongly suspect the scale allows for feet and 10th of feet, or rods & links.

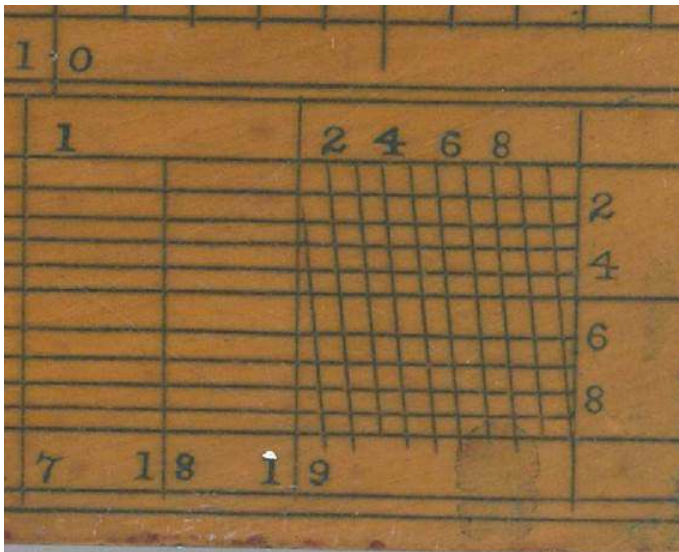


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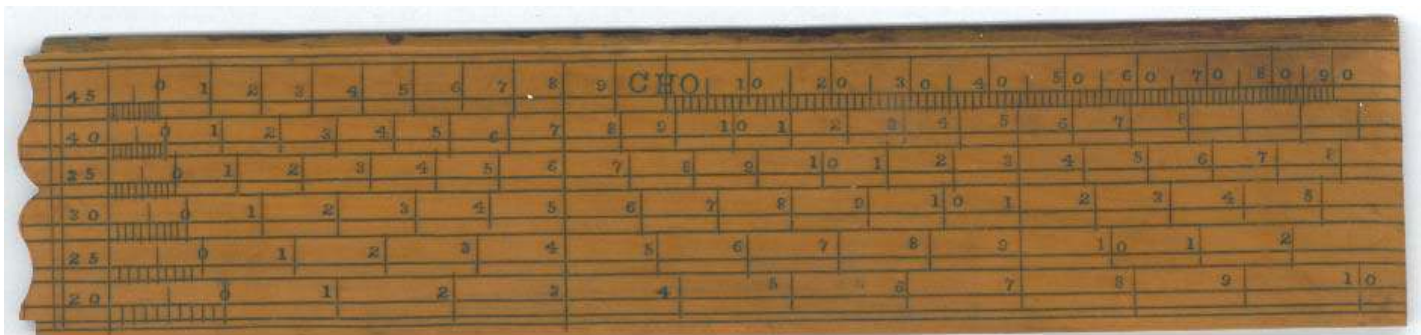
Here at the NH State Archives, we have a compass formerly used by Theo Silver (of Boscawen). In the wooden box case, is also a wooden scale 6" long. It does not have the degrees, but it does have several different scales.



One side of Silver's scale



An enlargement

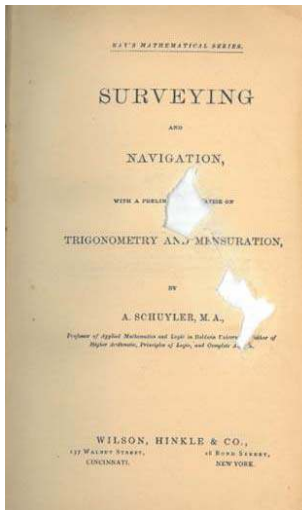


And the back of the scale

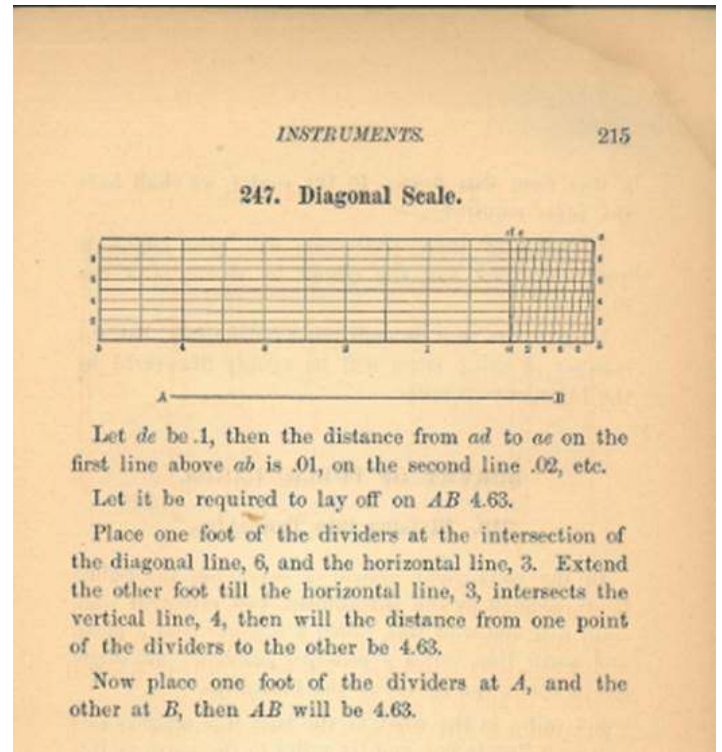
I also suspect that an examination of Love's Geodesia, or Flint's Practical Geometry books would have an explanation of how to use the scales with diagonal lines.

Thanks for the reason to exercise the little gray-cells.

Brian Nelson Burford
NH State Archivist
(603) 271-2236



Theo Silver's text was Ray's Surveying and Navigation dated 1873.



Young Surveyor's Committee August Cookout

On August 11th the Young Surveyor's Committee held a cookout at the TF Moran offices in Portsmouth. There was a good turnout given the COVID situation, and the YSC provided pizza and beverages. Some of the books rescued from the Thompson School back in January were given away to aspiring licensees, these books are duplicates of the many books rescued. A representative from Keystone Precision attended doling out swag and raffling off a Lego Trimble kit. Tim Runnals from Norway Plains also came and set up a station where attendees could fly a drone and discuss the applications drones can be used for in aerial mapping and surveying. The YSC made sure to practice social distancing and enforced proper sanitation procedures to keep the spread of COVID in check, they even took a socially distanced photo with Tim's drone!

Note that there is a significant collection now available for borrowing through the NHLSA Library, if you are interested in borrowing a book to study for an exam, to enrich your surveying knowledge, or put yourself to sleep at night, please contact Eric Salovitch at esalovitch@tfmoran.com for information regarding the catalog and how to borrow.





We move to a different part of the state for this month's *Where Am I?* Extra points to those who can guess exactly where this photo was taken from. Send your guesses to Barbara at info@nhlsa.org.

We received one guess from the previous month. See below.



Emily,

I'm guessing your mystery WHERE AM I photo in the September issue of *The TBM* is taken at White Island Lighthouse out at the Isles of Shoals. Hope this column catches on.

Mark Stevens, LLS

BIG REVEAL

By: Emily Hayes

Who knew that the first location chosen for this new segment would be so complex? There were multiple people involved

and boatloads of paperwork to read through (pun intended) in order to feel confident about writing an article featuring this historic landmark.

Enjoy!

The Location: White Island, Isles of Shoals

The Project: Replacing the covered walkway over the gully between the light keeper's dwelling and the lighthouse.

Let us start with some history about this little island. White Island is the southernmost island among the Isles of Shoals. The nearest mainland point is 6 miles to the west, Ragged Neck in Rye. White Island is located 10 miles southeast from the only deep-water port along the 17 miles of NH coastline, the mouth of the Piscataqua River.

The lighthouse and light keeper's structures, both built of rubblestone & mortar, and the wooden covered walkway were first built in 1820. The lighthouse was constructed partially in response to a vessel wreck on Smuttynose Island in 1813, resulting in the loss of all 14 sailors aboard.

White Island was chosen because of its vicinity between the twin lighthouses to the south at Thacher Island off Cape Ann in Massachusetts and the single lighthouse to the north at New Castle. To distinguish itself from the white lights to the south and the north, White Island originally displayed combination of white, red & blue lights beaming from 15 lamps and reflectors.

Another unique feature to the original lighthouse was the fog bell. Weighing in at 806 pounds, it is thought to be the only bell installed inside of a U.S. lighthouse and the first U.S. bell to be struck by clockwork machinery as opposed to being hand struck by the light keeper.

Unfortunately, by 1824 the mortar used in the lighthouse structure began to break down and crumble due to the salt rich sea spray. The lighthouse was encased in wood sheathing & shingles and painted white.

1842 brought the first major change to the island, the original square covered walkway that was destroyed by multiple storms, was replaced with an ingenious triangular formed structure. Its unique shape and system of rigid braces and supports allowed it to endure and survive 165 years of storms with minimal repairs.

Between the early 1830's and 1851, several investigations of multiple U.S. lighthouses found numerous faults due to the loose supervision of the current lighthouse system. Inadequate keeper training, poor design of structures and lanterns, ineffective illumination and unregulated use of oil for the lamps were just some of the many issues that came to light. In 1851, a massive document containing past inspections and a high level of criticism against the existing lighthouse system prompted Congress in 1852, to create The Lighthouse Board. The board brought in Navy & Army



[Continued next page](#)

officers, trained engineers, and scientists to supervise, provide expertise, and reform the current lighthouse system.

In 1859, a major task was undertaken. Sitting 36' above mean high water and adjacent to the broad based rubblestone lighthouse, an impressive 58' tall, 12'-8" diameter brick cylindrical lighthouse topped with an extensive iron framework housing the lighting apparatus was built. This is the lighthouse that still exists today. A massive 9' tall, 4.5' diameter revolving Fresnel lens was installed. Named after its inventor Augustin Fresnel, it was the second most powerful lens in existence at that time. The previous rubblestone lighthouse was mostly dismantled and then roofed to serve as a storage space for the lamp oil.

Over the next decade and a half, a large number of changes were made across the island:

- 1877, a picturesque two family dwelling was built in an effort to improve moral for the light/island keeper & assistant keeper and their families who were spending long periods of time away from the mainland. It was a drastic improvement to the small quarters in close proximity they had previously. The original keeper's dwelling was partially demolished and then roofed to contain and protect the water cistern.
- 1905, a new machine struck fog bell was installed on the roof of the cut-down original 1820 lighthouse.
- 1910, a streamlined Lighthouse Bureau replaced the current Lighthouse Board which brought in additional inspectors.
- 1911, the lighting apparatus was upgraded to an incandescent oil vapor lamp utilizing pressurized kerosene. It produced a much brighter light than the older oil lamp.
- 1912, the fog bell was again replaced, this time with a fog signal. Compressed air was forced through perforated cylinders to create a siren style signal.
- 1913, an additional keepers dwelling was constructed on the rubblestone foundation of the original 1820 dwelling.
- 1939, the Lighthouse Bureau was absorbed into the U.S. Coast Guard. Based on a project the Lighthouse Bureau had proposed, the Coast Guard generated extensive plans to move all manned lighthouses towards full automation by 1990. Structures and buildings no longer considered functional while moving forward toward complete automation were to be removed.
- The mid 1950's brought major changes to White Island. The 1877 two family dwelling was demolished and remains of the original 1820 lighthouse were removed.
- 1958, the kerosene lamp was replaced with an electric double drum, airport style revolving beacon.
- During the early 1960's the helicopter pad was installed.
- 1980 was the year that White Island was added to the National Registry of Historic Places. The 1842 covered walkway, 1859 brick lighthouse and 1913 keeper's dwelling embodied the historic significance to be recognized alongside many other prominent landmarks to be honored and preserved.

A handful of major changes were made before the White Island Lighthouse became fully automated in 1986:

- Generators, emergency backup equipment, and solar panels were installed. Wind velocity and moisture sensors were put in place to activate the light and fog signal.



The helicopter used to transport the timber.



Setting the timber trestles.

- The current light is activated at dusk or during periods of fog, rain or snow. The light illuminates 2.8 seconds of a bright white light every 15 seconds, which can be seen at a range of 21 miles.
- The current fog horn when activated blasts a signal every 30 seconds.
- August 1993, White Island ownership was transferred from the U.S. Coast Guard to the State of N.H.
- 1997, a multi-agency seabird restoration project began on the adjacent Seavey Island. Access to Seavey Island from White Island is only possible during very low tide. The program was very successful within its first year. A small colony, 6 pairs of common terns nested and raised their young on the island. The N.H. Fish & Game Department now oversees the program and the Common Tern population has been on a steady incline since 1997.
- 2000, a group of students from North Hampton known as the Lighthouse Kids, began a mission to raise awareness and create partnerships to help preserve the White Island lighthouse. The group collaborated with the State of N.H. and between their fundraising and securing a \$250,000 federal grant, a restoration project began.
- 2005, the funds were used to repair the damaged brickwork on the lighthouse and replace the roof on the keeper's cottage.
- April 2007, a vicious storm ravaged White Island. It destroyed the navigation equipment, fog horn, solar panels, helicopter pad, and sadly the wooden covered walkway. The Coast Guard promptly replaced the navigation equipment and fog horn and soon after repaired the helicopter pad.



Jeff Thurston, owner of Thurston Millworks in Concord, was hired to rebuild a historically accurate replica of the wooden covered walkway. To start, concrete footings were poured for the base of the walkway and the support braces.

Thurston brought in Richard D. Bartlett Associates, LLS to as-built the footings and center pins. I don't think Dave Collier & I knew what we were getting into that day, but it ended up being the most memorable project I've ever worked on. Our data was then utilized by Chris Barstow, owner of Specialty Timberworks, to draft the architectural plans. It took Thurston six weeks to meticulously mill the countless beams, braces, and trestles.



Once completed, all the timber was loaded onto a barge then tugged to the outskirts of White Island. A helicopter was utilized to haul all of the timber and materials to the island. It was also used to set the massive pre-assembled timber trestles on the concrete footings. Jeff Thurston and his crew of six guys lived on the island for 31 days. They had almost perfect weather for the duration of the rebuilding project, almost no wind and only a few days of rain.

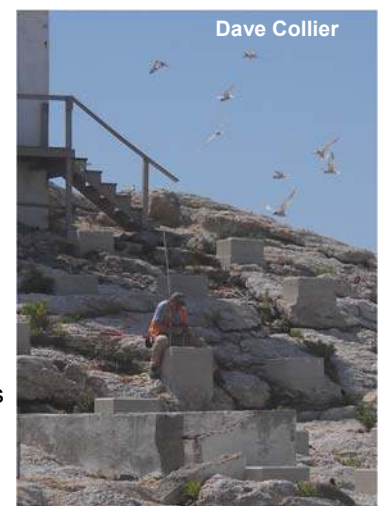
References:

Tom Mansfield, Chief Architect, Department of Natural & Cultural Resources
 Jeff Thurston, Owner, Thurston Millworks
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 "Ten Miles Out" Guide Book to The Isles of Shoals, Author Lyman V. Rutledge

Did you know?

Some may ask, what is the purpose of the six foot ruler extended above Dave's head?

It is the result of a very handy piece of info the island keeper gave us, it keeps the terns from dive bombing your head.





Outside the
Boundaries

Beyond These Borders

By Timothy Peloquin, LLS



Guatemala 2006

In 2003, my first journey began to the Dominican Republic to help reconstruct a water system at a school in Santo Domingo. Now 17 years later, I have been blessed to have had the opportunities to travel 20 times to developing countries, from DR to Honduras to Guatemala (6) to Belize (2) to Haiti (6) and the last four trips (2017 to present) to Zambia and Malawi, Africa. Each trip has been a truly wonderful part of my journey. I typically do not keep a journal but have on these various trips so I could later recall the important lessons learned, and the incredible memories. These trips have usually involved a building project, from a new building for an orphanage of boys in southern Haiti, to water systems in Guatemala, to establishing a GPS control network in Belize. But my focus on this brief article, which I was asked to share, is my most recent trips (over the last three years) to the incredible continent of Africa!



Haiti 2013



Mable - Zambia 2017

Africa... a land of untold beauty... incredible sunrises and sunsets, abundant wildlife, and a beautiful yet very impoverished people. In July of 2017, my wife and I started to sponsor two children in memory of my mom and dad who both had recently passed. While we had sponsored five children in Guatemala who had graduated (and three of whom I still keep in contact with), we chose "outside the box" with an excel-

lent organization called Family Legacy (name was appropriate) and were blessed to have Mable and Wisdom. In October of 2017, I made my first trip to Zambia to meet them and view the surroundings and see "what can I do" beyond sending simple monthly checks.

My first time to meet them had arrived. It was a typically hot African Saturday, and it was arranged I would meet them within their compounds (a neighborhood of thousands and thousands of shacks in a very small area of the city). Their homes are made of whatever material they can muster and are on average, maybe 15 feet x 15 feet. Running water, maybe. No internal roads, all foot traffic. The children typically do not go to school, unless they are sponsored, especially these termed/labeled "vulnerable children." When I got to Mable's house, first time, her mother and siblings warmly greeted me. I brought them about two months of groceries as well as various useful gifts from the States. It was wonderful meeting Mable and her family UNTIL the social worker asked me "tell Mable how you came to sponsor her?". I thought for a minute and asked the worker "are you sure?". He said yes, why not? I decided, well okay. I began to tell this sweet 11 year old girl (who had never been to school) of how I cared for and loved my mom and dad very much, and how over the last 3 1/2 years I took care of them in their old age and illnesses.



Chobe 2020



Malawi 2020

I spoke of losing my dad, then 3 months later, losing my mom on Christmas morning as I held her hand alone while she took her last breath. I began to weep (couldn't help it!), but continued. I told her shortly after my mom's passing, I chose to sponsor a little girl in my mom's name, then looked at Mable and said "and I chose you". MAN, why did I have to say that! Now, I really started to cry. Oh oh. I continued. Then I said to her "now I just traveled 10,000 miles to meet you." Double barrel crying now, no hiding, how embarrassing. BUT the next minute changed me/ melted me!! This sweet little girl, got up, sat on my lap, and deeply hugged me for like 20 seconds. I tell you, the whole world was a blur. Here I was, in hot dusty Africa, in the middle of a condensed compound, with people I do not know, YET in those moments, there was no place on planet earth I would have rather been! It was very special to me. Funny thing, and I will not get into the whole story, but precisely a year later, I was back at the very same home, with similar gifts and exchanging stories, and when it came time for me to leave, Mable again deeply hugged me then began to cry uncontrollably because she did not want me to leave. I held her for maybe 15 minutes, but she was still crying when I had to leave. I pledged to be back, and indeed have been since.

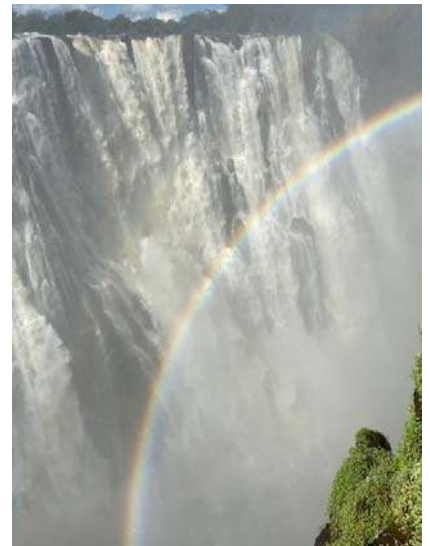


Mable - Zambia 2018

I returned again in 2019 and again in early 2020 (right as Covid-19 was starting). I was able to help this organization with various useful maps and topography at one of their orphanages. I also expanded my 2020 trip to include Victoria Falls (including a microflight) and a Safari in Chobi and a trip to see a new friend in Malawi.

Honestly, I can write a book some day on these various deeply personal and touching experiences, but share this tidbit with you, the reader, as a hoped for encouragement. If you ever want to know more, I honestly will sit down for a coffee and chat anytime. Let me know. One lesson I have easily learned is that it is truly more blessed to give than to receive. My small sacrifices of time and money are heavily outweighed by the internal blessings and enrichment I have received.

Blessings, Tim Peloquin (Promised Land Survey, LLC)



Victoria Fall 2020



Zambia 2019



Tree of Life Orphanage Zambia 2020



Belize 2011

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