VOLUME 32 ISSUE 4
September 2018

AMERICANLOCATOR MAGAZINE

Inside...

THE ROUNDTABLE *LIVE!* - PICNIC AT A JOBSITE
A DEVASTATING STRIKE IN SUN PRAIRIE, WI
ONE PIPELINER'S VISION FOR DAMAGE PREVENTION
and more!

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On the Cover

The Roundtable Live! at Planet Underground, August 9, 2018. View our photo essay from this historic event featuring excavation and safety demos from across the industry, p. 8.

Cover photo courtesy Phil Gioja.

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VIEW from the STREETS
with Matt Streets, Editor

Remembering What We're Fighting For

Wow! Thanks everyone for coming back to another jam-packed issue of American Locator*! We have loads of stuff to go over this month, so let's dive right in.*

DIRTy Work

I know you guys have been busy out there, because according to the newest DIRT Report, released on September 19th by the Common Ground Alliance, construction spending and excavation activity has gone up. Unfortunately, so have damages to underground facilities: "The report, which analyzes all 2017 data submitted anonymously and voluntarily by facility operators, utility locating companies, one call centers, contractors, regulators and others, used a refined statistical modeling process to estimate that 439,000 excavation-related damages to underground facilities occurred in 2017, up 5.5 percent from a revised 2016 estimate."

Part of a tribute to firefighter Cory Barr who was killed in a gas line strike explosion in the town of Sun Prairie, WI this July 2018.

I'm not sure if anyone out there was actually expecting damages to go down, but according to the report, even though damages increased from 2016 to 2017, the ratio of damages to excavating activity was essentially the same over that time span, meaning that hopefully the damage rate has plateaued for now. Some other interesting, if not necessarily ground-breaking, takeaways from the report show the heavy preponderance of damages occurring during the summer months, typically the height of digging season:

- Damages that occurred on a weekend were nearly twice as likely to have involved hand tools (shovels, post-hole diggers, etc.) than those that occurred on a weekday.
- 50 percent of all reported damages occurred between June and September in 2017.
- August was the month with the most total damages in 2017.

#SUNPRAIRIESTRONG

This breakneck pace of excavation activity, especially regarding fiber optic installations, can have dire consequences though, as seen recently this summer in the small town of Sun Prairie, Wisconsin. On July 10th, a sub-contractor installing fiber optic line struck and ruptured a 4-inch gas main in the heart of downtown. This led to a massive explosion that killed one firefighter, severely harmed another, and injured nine other people.

The Planet Underground team and I travelled up to Sun Prairie to witness the devastation firsthand, and to interview numerous business owners and everyday citizens whose lives were profoundly affected by this incident. See our article on p. 20 for more coverage, and keep an eye out for Planet Underground TV Episode 11 which will cover the Sun Prairie disaster. When reading the article and watching the video, never forget that this tragedy, and many others like it, was completely avoidable.

Summer Stars, Pipelines, New Mindsets

We also have a great wrap-up of our Roundtable *Live!* summer event, an in-depth interview with pipeline safety expert Vincent Maloney, and an exclusive career spanning talk with Charles Hamm of Lonestar Locating, who recently celebrated 10 years in the business! Finally, our guest editorial by Fred LeSage of XL Catlin last issue definitely struck some chords with our readers! Mr. Allen Scott, a utility coordinator out of Marietta, Georgia reached out to us in reaction to this article, and offered to compose a response, which we have printed below.

American Locator *readers: Remember, if you have any stories, or experiences, or tips of the trade that you would like to share, please contact us! As always, the best way to learn is from each other and our shared experiences in this industry.*

A Reader Commentary on "A New Mindset for Damage Prevention"

by Allen Scott, C.W. Matthews Contracting Company, Inc.

Mr. LeSage's article, *A New Mindset for Damage Prevention,* in Vol. 32-3 of *American Locator,* reinforced much of what my colleagues and I have had to say about damage prevention over the past 10 years. We are utility coordinators for C. W. Matthews Contracting Company, Inc. in Marietta, Georgia. We are highway contractors, and our conversations about damage prevention reflect the bias of excavators. Because of this, I did not think anyone needed to hear our bias, until I noted that Mr. LeSage is not an excavator. True, he represents excavators, but as a Risk Engineer, his job is to escape bias and to state objectivity. When I found him to be in such agreement with the three of us, I began to think that we might be objective after all.

The star comment of Mr. LeSage's article was, "…I think the damage prevention world is currently fundamentally flawed in its approach." I have spent nearly a quarter of a century working as a utility coordinator, and as such, I have worked "hand-in-hand" with utility facility owners/operators, GA811 personnel on all levels, project owners, contract locators and enforcement agencies. I have grown to love and respect these people and do not want my comments to be taken as disparaging of their commendable efforts toward damage prevention, but at the same time, I confess that I wholeheartedly agree with Mr. LeSage's assessment of the damage prevention world –it is "fundamentally flawed."

As I near the end of my career, it is time either to speak up or join the ranks of the old soldiers and "simply fade away." I choose to speak up. Part of the fundamental flaw is the assumption that most, if not all, utility strikes are the result of careless excavation. If thoroughly investigated, most, if not all, utility strikes are the composite result of carelessness by multiple parties. To illustrate the point, let's interview the operator of a CAT 336E Excavator that just demolished a 4" HDPE gas main.

Interviewer: "Was the gas main marked?"
Operator: "Yes."
Interviewer: "Were the marks accurate?"
Operator: "I think that they were accurate."
Interviewer: "Did you expose the facilities before excavating over the marks?"
Operator: "No, I did not."

The excavator is clearly in violation (at least in Georgia, he is). Now, the facility owner/operator is completely justified in seeking recovery, and the enforcement agency proceeds with fines. But let's dig deeper (no pun intended) into this incident and resume the investigation:

Interviewer: "Why didn't you expose the facilities before digging over the marks?"
Operator: "I did not see a need for it."
Interviewer: "What do you mean, you did not see a need for it? The facilities were clearly marked, and you blatantly ignored them."

Operator: "Not necessarily so. When I started on this project, the marks for the gas main were over there. That is where I exposed the facilities and surveyed them. The survey proved that the pre-existing facilities were situated above my finished grading template and thus, in conflict. So, I brought this to the gas company's attention. Not long afterward, the gas company mobilized a crew to remedy the conflict by retiring the pre-existing infrastructure in favor of new infrastructure. It did not make sense to me that a facility owner/operator would resolve a conflict with my proposed construction by moving its facilities from one situation of conflict to another situation of conflict. Thus, I made the assumption that the gas company used the construction layout that I had provided, referenced the same construction plans that I am using, and positioned new facilities out of conflict with the proposed construction. When I encountered the facilities that are now damaged facilities, I was still excavating above my final grading template. If the designer, the installer, and the inspector had done their jobs, I should never have gotten within three vertical feet of the relocated facilities."

This might be reflecting an excavator's bias, but the operator was thinking rationally, and I agree with him. The bottom line of where I am headed is this: new utility infrastructures are being damaged on highway projects because of careless design and careless installation. I am not saying that there is no such thing as careless excavation. I definitely am saying that excavation is not the only cause of utility facility damages.

Damage prevention does not begin on the excavation site. I know that I am dating myself here, but damage prevention begins on the drawing board. Most highway construction plans address utility accommodations in two dimensions only, length and width. Regrettably, highway contractors also must work in that third dimension that is called depth, and it is in this dimension that damages typically occur. A design that addresses only two dimensions is exactly what it is–a flawed solution to a complicated problem.

In my hypothetical yet historically accurate utility damage, the excavator was actually the more conscientious stakeholder. He did his job. He exposed the utility facility, found it in conflict, notified the facility owner, waited for a new installation that was meant to remedy the conflict, and then went to work fulfilling his contractual obligations. The designer and the installer had a chance to remedy a conflict, but instead, they renamed it. Therefore, as an excavator, I tire of being accused of being a willful miscreant while others fail to do their jobs of design, installation and inspection. For all the blame for utility damages to be directed toward only one stakeholder is neither fair, nor is it healthy. It is simply not getting to the root cause of utility damages.

If you think that I have broached a legitimate problem, I would like to talk with you further. If you think I haven't, then I'll just join the old soldiers and, Lord willing, fade into retirement. Email: Allens@cwmatthews.com.

PRIVATE LOCATING SUCCESS WITH BLOOD HOUND

Let's face it: business is hard and full of uncertainties. With Blood Hound's Strategic Acquisition Program, we reward you for what you've done, offer you the opportunity to continue to benefit from your involvement - and provide security for your future. When it comes to the future of your business, you have options, and those options are good.

After spending 19 years in the public utility locating sector, Mark Mason identified an opportunity in the Private Utility Locating market and started Blood Hound in 1999. From working out of his garage and growing the Midwest Market - to being recognized on Inc 5000 Fastest Growing Companies to watch in consecutive years, Blood Hound is now recognized as a national leader in Private Utility Locating.

"During the process of becoming a national Private Utility Locating firm, my wife, April, and I had many long days and sleepless nights. I know what it's like to meet payroll, need to acquire more equipment for the growth of the company, and impact my employees' families with the decisions I make."

It was a scary decision for Mason to sell his company; one that he did not take lightly. But the benefits were strong – and immediate. The question of sustainability was gone and his dreams for growth were a reality. He had the added assurance that if something happened to him, there was a network of leadership in place to ensure that daily operations would continue at the same level of activity and quality. Combined with the benefits of being able to offer his employees better benefits at lower cost, better equipment and training, and greater opportunity for growth and advancement in a larger organization assured Mason that he was making a decision that would have a positive impact for everyone.

Plans were made, and quickly executed, to expand service offerings from Blood Hound's cornerstone service, Private Utility Locating, to offer clients a full suite of underground utility damage prevention services. Ground penetrating radar, sewer and cross-bore mitigation, vacuum excavation, concrete scanning, subsurface utility engineering and leak detection services now provide our clients with a single, trusted source for comprehensive safe digging.

Today, more than 65% of buried utilities in the United States are privately owned. Fueled by a prime utility market, this momentum provides a unique opportunity for Blood Hound to pursue other strategic partnerships throughout the United States. Blood Hound is partnering with like-minded private utility service companies across the country to expand their national footprint and gain market share in concentrated service areas. If you are interested in learning more about partnering with Blood Hound, please visit our strategic acquisitions page: *www.BHUG.com/partnerships*

"I am excited to be able to offer other business owners the same opportunity that was offered to me. My acquisition was a game-changer for my business, that I was confident would benefit my employees and my family."
- Mark Mason

BLOOD HOUND
Underground Utility Locators

Questions? If you are interested in more information about joining the Blood Hound team and partnering for the future of your business and employees, please email:
partnerships@bhug.com

YOU HAVE OPTIONS, AND THOSE OPTIONS ARE GOOD.

Blood Hound seeks strategic acquisition opportunities to expand their National footprint.

Let's face it: business is hard and full of uncertainties. With Blood Hound's Strategic Acquisition Program, we reward you for what you've done, offer you the opportunity to continue to benefit from your involvement - and provide security for your future.

It all starts with a simple conversation. Our transparent process will make your options clear and your decision a confident one.

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BLOOD HOUND
Underground Utility Locators

THE ROUNDTABLE *Live!*

August 9, 2018

This summer, Planet Underground hosted a first-of-its-kind occasion in celebration of National 811 Day with the Roundtable Live!*, a groundbreaking event that brought nearly 300 professionals from the damage prevention industry to our facility in Manteno, Illinois. Attendees were able to enjoy this "picnic at a jobsite" by seeing first-hand, professional skilled utility contractors excavating around and installing underground utilities.*

Every aspect of the locating, mapping, excavating, and installing phases of underground utility jobs were on display: HDDs, backhoes, trackhoes, coring machines, vacuum excavators, aerial drones, GPR, EM locating, jobsite documentation software, apps, sewer cams, trench plates, Jersey walls and so much more!

Not a trade show, the Roundtable *Live!* allowed people in the industry to actually see the equipment that they rely on every single day, in use, and network with the people who oversee and operate it. In our never-ending quest to spread knowledge of damage prevention, Planet Underground hopes that events like this become a yearly occurrence.

TAKING ACTION!

> "We loved having the balloon there to help spread the damage prevention message...I made a couple of critical contacts and I'm certain more things will come from our being present."
>
> *-JimBob Sims, Cox Utility Services*

Upper left: Planet Underground owner Mike Parilac ready to take a ride, and drone overhead view of the event site.
Background: Early sunrise, preparing for the day's events inflating the 811 Balloon.

THE ROUNDTABLE *Live!*

NETWORKING KNOW-HOW

> "...a lot of positive energy. A number of the contacts and conversations I had personally were excellent and have helped me understand better the state of technology and where the industry is moving."
>
> *-Scott Combis, Badger Daylighting*

Background: *Crowds watch demos. Left T to B: Crowds gather at site of staged sewer lateral strike, coring in prep for excavation work.* ***Right:*** *Western Utility crews demonstrate proper hand digging.*

THE ROUNDTABLE *Live!*

OPERATION EDUCATION

> "A lot of companies and people talk about damage prevention and jobsite safety—all of you at Planet Underground GET IT and LIVE IT. So proud to know this team, and we so look forward to being involved in this partnership as it grows."
>
> *-Greg Preisch, Electric Conduit Construction*

Background: *Midwestern Contractors begin excavation site prep work.* ***Right T to B:*** *Horizontal directional drilling and post-inspection work demo by NPL, trench shoring by United Rentals, conduit installation underway by Western Utility.*

THE ROUNDTABLE *Live!*

INVESTIGATE..LOCATE..EXCAVATE

Background: *Western Utility hand digging demo.* ***Left T to B:*** *Drone display, EM locating demos, GPR, National Excavator Initiative talks about their latest App.* ***Right T to B:*** *Coring and potholing over exposed utilities, HDD excavation/education.*

THE ROUNDTABLE *Live!*

SHARING KNOWLEDGE

Background: *Guests enjoy food, networking.* ***Top L to R:*** *Examining staged sewer lateral hit, Stream-C IDS GeoRadar, potholing and vacuum excavation demos.* ***Bottom L:*** *Planet Underground films ComEd safety presentation.*

"The Roundtable *Live!* was really groundbreaking. Good atmosphere for client and contractor networking...great food. Very cool idea. CGA and Veriforce have struggled to gather both sides for years. Your team did it flawlessly." *-Justin Maloney, Patriot Pipeline Safety*

Left: Downtown Sun Prairie, WI immediately after the explosion July 10, 2018. At the top far right of the photo, only rubble remains from the Barr House restaurant at the corner of Bristol and Main. Just south of Main, the remains of Glass Nickel Pizza lost to fire.
Photo courtesy Dennis McCormick, Wisconsin State Journal.

Below: Citizens add roses to a memorial to firefighter and owner of Barr House, Cory Barr, the sole fatality in the explosion. *Photo courtesy Paul Larkin, Staking University.*

SUN PRAIRIE STRONG

A community in shock as excavation brings devastation

THE INCIDENT

One firefighter was killed, and eleven other people–including police officers, firefighters and civilians–were injured in an explosion caused by a ruptured gas line in Sun Prairie, Wisconsin on July 10th, 2018. The explosion happened at 7:05 p.m. at the intersection of Main and Bristol streets after first responders arrived to investigate claims of the smell of gas in the area. Firefighter Captain Cory Barr was helping to evacuate people from nearby buildings when he was killed by the explosion. Six other firefighters were also among the injured and taken to the hospital.

Underground utility work was happening near the site of explosion, when a 4-inch natural gas main was struck by a sub-contractor installing fiber optic line. There were indications that the locations of underground utilities were marked in the downtown area before the contractor struck the gas main, ultimately causing the explosion. Just outside the cordoned off blast zone, yellow flags denoting an underground natural gas line were still in the ground, and spray paint marks covered the streets in both directions.

More than 100 people were displaced from their homes, and at least five buildings were demolished by the blast, including the Barr House, Glass Nickel Pizza, the Watertower Chop House and a residence nearby. On Friday, July 20, Wisconsin Governor Scott Walker declared a State of Emergency for the City of Sun Prairie and Dane County due to this massive explosion that destroyed portions of downtown Sun Prairie.

THE EXPLOSION

Learning that the remnants of the destroyed buildings were going to be torn down, we decided to take the Planet Underground team up to Sun Prairie on August 23rd to see the devastation firsthand and interview residents who were directly affected by the explosion. We parked across the street from the Fire Station on Bristol St., on the north-end of the street. A chain-link fence created a barrier around the entire block, and taped to it were dried out flowers, and faded signs and memorials for Cory Barr, the firefighter killed in the explosion.

> **"It was surreal. We heard the boom and saw the explosion, and felt the concussion wave as it came down the street."**
> *-Adam Bougie, Owner, Glass Nickel Pizza*

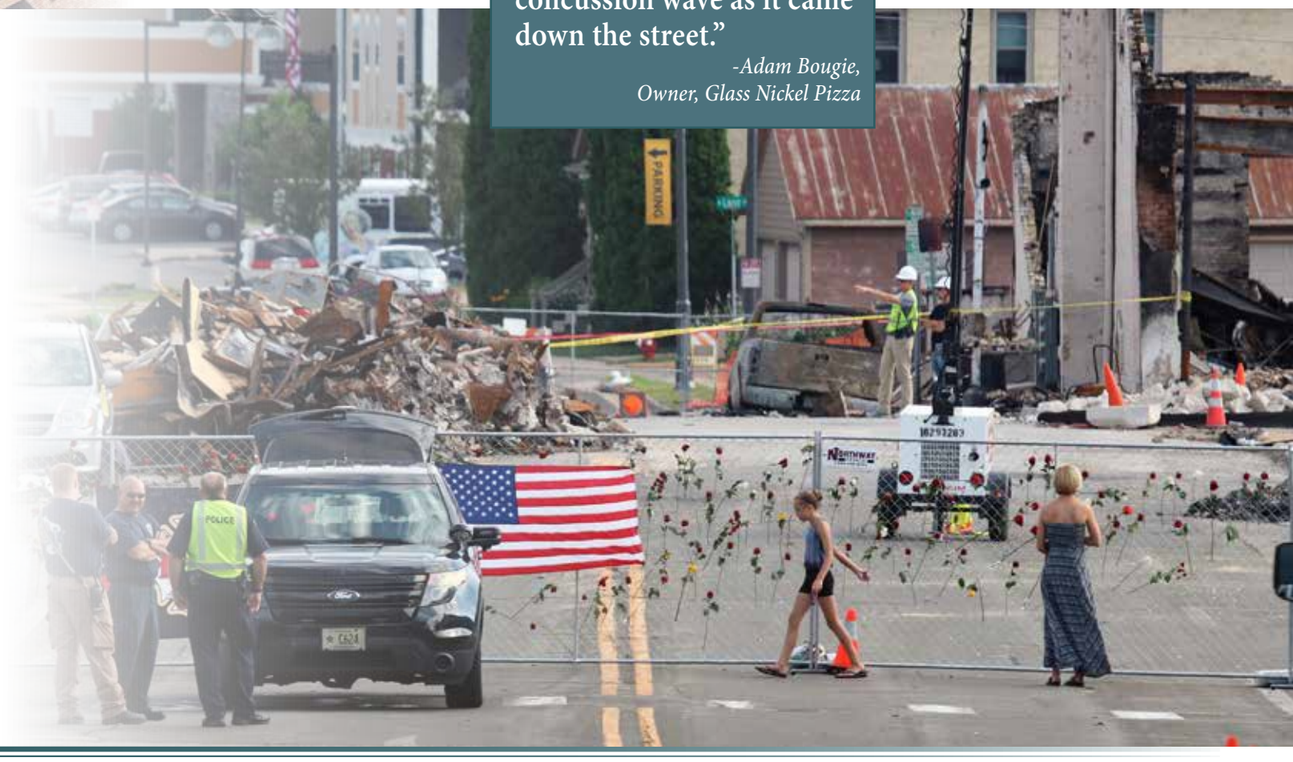
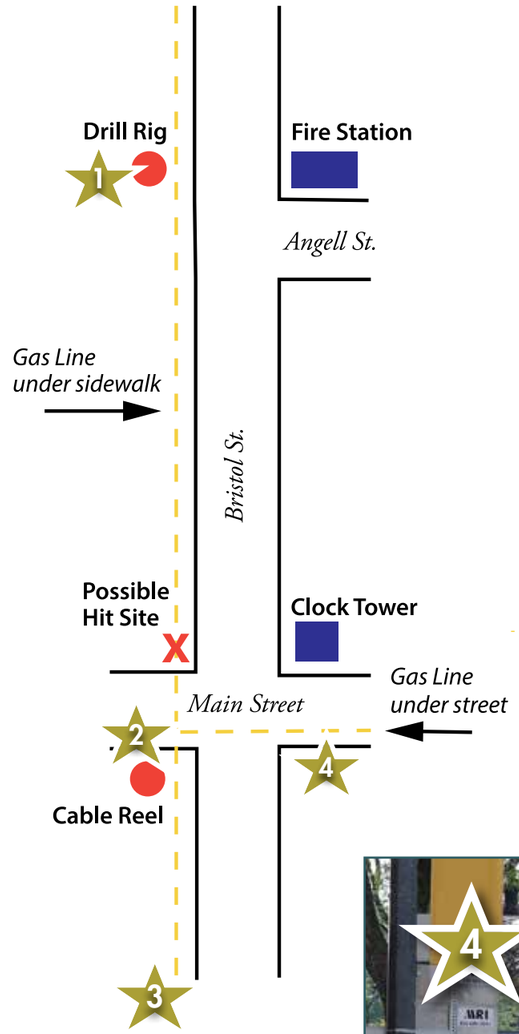


Photo 1: Sun Prairie Volunteer Fire Department. Across Bristol St., drilling site and rig involved in gas line strike and later explosion.

Photo 2: Looking south down Bristol St. from drill site. Charred cable reel can be see in the distance behind and to left of No Parking sign. Glass Nickel Pizza building which burned as a result of the explosion can be seen just beyond reel across Main Street.



Above map: Downtown Sun Prairie, WI showing local landmarks, potential hit site and location of excavation work undertaken.

Photo 3: Capped gas line farther south down Bristol St., a distance a ways from main accident site.

Photo 4: Looking NW down Main St. towards site of Barr House Restaurant (historic clock tower opposite) destroyed in the initial main explosion, near possible hit site.

The first person we talked to was Adam Bougie, owner of Glass Nickel Pizza in Sun Prairie. While the Barr House took the brunt of the explosion, gas from the leak travelled southward down the sewer pipe, ultimately spewing geysers of flame into the Glass Nickel building, which was also completely destroyed as a result. Adam, a 14-year resident of Sun Prairie, was very forthcoming about what happened on that eventful day. "I got a call around 5:45 p.m. that there was a gas leak, so I came down to make sure everything was going smoothly," Adam said. "They wouldn't let us back in the building, but told us that we would be able to get back inside within an hour or two. So we were just waiting around to get the all-clear to go back in, when out of nowhere, there was a giant explosion."

Adam Bougie (with his daughter) spoke with us a in front of the former site of his restaurant, Glass Nickel Pizza. Crews were busy cleaning up debris.

Patrick DePula, owner of Salvatore's Restaurant, was present the night of the blast and gave us a detailed account of the chaos and aftermath of the accident.

At 7:05 p.m., the natural gas that had been spewing out of the ruptured gas line ignited and demolished the Barr House building at the intersection of Main and Bristol streets (see map p. 23). Adam and his employees were standing about half a block away when it happened. "It was surreal," Bougie said, "we heard the boom and saw the explosion, and felt the concussion wave as it came down the street." Still reeling and dazed from the massive explosion, Adam realized that his troubles were just starting. "So, the Barr House blew up, and then the gas main started on fire and continuously torched my building. They weren't able to turn the gas main off for a while, so it wasn't too long before it was fully engulfed in flames, and it just burned my place to the ground."

We also spoke with Patrick DePula, owner of Salvatore's Restaurant, who said that they had smelled gas in the building, and about 10-15 minutes before the explosion, around 6 p.m., the fire department had arrived and asked them to evacuate. "I went upstairs to help get our tenants out of the building, came back to the restaurant one last time to make sure everything was off, walked out the front door. I looked across the street, and my staff was standing across the street with our customers, and I'm thinking to myself, this is going to be an inconvenience, we'll be back in 15 minutes, a fire drill like you're in high school. Well, I look to the left, where I can see the Barr House. I saw the fire truck sitting here, and as I looked at the Barr House it exploded. I remember seeing the air shimmer as the shockwave came toward me."

THE AFTERMATH

Adam credits having good insurance as the first step to helping rebuild his business. They are covering his employee's lost wages, and even helping Glass Nickel reopen in a new, temporary location. "All said and done, it will be about three months since the explosion that we will have a new location up and running," Bougie said.

Other businesses along Main and Bristol Street might not be so lucky though. Adam, who is a member of the Sun Prairie Business Improvement District, explains that having these streets closed for a long period of time is hurting some of the smaller businesses. "It's been hard, some of these places run pretty tight margins, and the loss of business from not having foot traffic being able to readily flow through in front of your store has been difficult for a lot of people."

Recovery from the explosion has been difficult on a number of levels for the citizens of Sun Prairie. Because it is such a tight-knit community, almost everyone knows someone who was directly impacted by the devastation, and maybe that is why the response and huge outpouring of support from

Above: The family of Ian McCutcheon taking stock of the devastation that visited their town. View down Main St. looking west.

the townspeople of Sun Prairie has been so widespread. As Adam explains, "The community response has been amazing, there's been a lot of people who have been coming forward and offering to help out in any way that they can. I think there's a disaster relief fund that the community has raised over $400,000 for. It's been amazing to see how this tragedy has brought the community together and watching the outpouring of support from everyone has been incredible. Losing my business sucks, but its just rocks and metal, all that stuff can be rebuilt."

THE FUTURE

So as the trucks hauled away scorched piles of rubble from the demolished buildings, a small crowd of locals gathered around to watch the interviews and offer their own stories of what happened on that fateful day. Many were wearing T-shirts emblazoned with the #SUNPRAIRIESTRONG logo, a sort of shorthand message used by the numerous fundraising efforts that have sprung up in the wake of this tragedy. A young man we spoke to broke down in tears describing the support he has received from the community since being made homeless by the explosion, while others were eager to tell about the strength and unity of this small town. But despite all of this, the next chapter of Sun Prairie is filled with uncertainties, and like the man wondering when he will be able to move back into his apartment, many others wonder about the future.

Mr. McCutcheon is one such concerned citizen: "I saw somewhere that Sun Prairie is one of the fastest growing cities in the Midwest, so we're going to have a lot of excavation and a lot of digging. It's certainly something I need to worry about, because I recently moved out and got my own apartment," says Ian. "Things like this are things you don't think about until they happen, and by then, it's too late. I think it's definitely awoken a lot of people in this town and created a lot of awareness about this problem."

Below: Edward Uffer, a Glass Nickel employee affected by the explosion, gives an emotional account of his experience and proudly wears the #SunPrairieStrong motto as they come together to rebuild.

The crew at Planet Underground would like to thank all the citizens of Sun Prairie for sharing their stories and experiences of the accident affecting their community. We'd like to extend a special thanks also to Kari Campbell of Berntsen International in Madison for acting as our unofficial guide to the streets and businesses of downtown Sun Prairie and assisting with our interviews and connections with people in the local area.

Locating Where the Rubber Meets the Road: An Interview with Charles Hamm, founder of Lonestar Locating, LLC

About a year and a half ago, Charles Hamm wrote an article on Linked In called "Who Is the Worst Boss In the World? Evidently, It's Me" and it caught fire, reaching almost 70,000 views and producing over 1600 comments. "It's what got me noticed there," Charles said, "Some of the nastiest things ever said to me were a result of that article, but also some of the nicest things at the same time." Mr. Hamm's overnight internet fame from this article probably came from his straight-forward, no-nonsense style of writing and his blunt assessment of what he looks for in an employee.

"I just wrote about what I was looking for in hiring people, and how I viewed things from the position of an owner trying to make a living running a company. In the last paragraph, I gave a description of the kind of person you don't want to be if you want to work for me. And I thought it was perfectly reasonable, but it really led to a lot of hateful comments."

Well, if there's one area of our industry that could probably use some tough love, it's the contract locating world. So American Locator *sat down with Charles Hamm, founder of Lonestar Locating, LLC, to get the straight-dope on locating, one-calls, employee turnover, working in congested oil fields, and the joys and perils of running your own company.*

Charles Hamm: "Always respect others property, and leave it as well as you found it, or better, when you finish your work."

Could you tell us about your background Charles, and then explain how you got involved in the underground utility business?

In Texas there is a small town called Galena Park, which is pretty much a suburb of Houston. After graduating high school in 1964, I went into the Marine Corps and served with them for four years. And when I came out I went to David Lipscomb University, and went on the G.I. Bill, where I had an interest in being an archaeologist. I studied classical languages, studied four years of Greek, three years of Hebrew, and then I ended up with a wife and three kids, and some of the realities of life kind of weighed on me. I never really was able to pursue an archaeological career or continue my education. And I kind of lost interest in it anyway, to try to be an archaeologist and at the same time do my own thinking.

I have worked at different things and have had businesses where I lived by my wits, but there was always just kind of an interest in knowing what was buried in the ground. I got a job with a locating company with the intent of learning everything that I could about it. I had a friend that was in that business, and then I reached the point where I felt like I saw some things that made me think this was a good idea for a business. I was working for one of the big locating companies that did contract work with the major utility companies. And I realized that there were things buried in the ground that these locating companies working for the utilities did not locate. So, I started off my thinking more in terms of what was not being located on some of these jobsites.

When exactly did you branch out on your own?

Well, I started Lonestar back in 2008 when I was 62 years old. I worked for locating companies for probably eight or ten years before that, and the rest of the time I just did different things along the way. Lonestar Locating started going after people who needed to know what was buried in the ground and needed to know everything. I thought that if I gave exemplary service, which I consider to be of paramount importance, that you could make a run at being the best. What happens, is that if you call the one-call, one guy comes out and locates the phone, and another will come out to locate the gas line, and you know how it goes. The one-call service was kind of a victim of itself, because people were willing to pay Lonestar to come out there and locate something that they could get located for free. But the difference was, we would come out and locate it, and we would get it right! As the company started, just like any other business, you starved to death. But it started growing, and then we evolved into sort of an unconventional locating company.

We started getting into oil field work, and this was when the business really took off. There are pipelines located in these oil fields that are made of fiberglass, and I wanted to be able to locate those lines. So we started developing doctrines and methods that would help us become efficient in locating things like sewer lines and storm and sanitary lines. Most people don't even attempt to locate them, or they just open a manhole and look and see which way the lines run. But if somebody really needs to know where that line runs, and where it is exactly, we help them by just giving a lot of thought to it. So we've become a very unconventional locating company in that people will call us with some of the most god-awful things you could imagine and want us to find it. And sometimes we are successful, and then of course sometimes we're not.

But the main things people call us for, are to find a buried tank or an oil well that got shut off underground 50 years ago, and they've got maps that were made in 1940! The real work we did was developing a method of finding unknown lines when an oil company is putting in new pipelines in an oil field where there may be eight or ten miles of easement that they're going to be digging. They'll call us and say we want you to go out and find every line that's out there.

"We located all these pipelines, and then stood by to assist the track hoe as he trenched through them. No damages. It was a great team effort."

Did they ever have maps for you guys?

Yes, we finished this job not too long ago in Delhi, Louisiana and our charge was: we want you to find the lines that we don't know about. We found 81 lines running in the easement where they were going to be digging. Some of those old lines are dangerous, because back in the day things were different, and they would just leave these old lines in the ground and not blow them out. There's product in these lines, there's oil and gas, and it's dangerous to just go digging through there and think, well, this is an old line and we'll just rip it out.

Are these non-metallic lines or metallic?

These are metallic and non-metallic. We've just gotten really good at it, and people depend on us to do that. We also have several hydro-excavation units that we use and that took us into another world. We looked at a hydro-vac machine as a locating instrument, and now we do a lot of potholing and trenching and that's been that's been a sweet thing for our business. Where we might have located it before, it might take us a week or two, but now they want us to pothole everything, and it extends the job to maybe six or eight weeks!

Let's talk about the one-calls. Texas is in a bit of a unique situation where they have two one-call centers taking the tickets, LoneStar811 and Texas811. Explain to our readers how this works, and if it is ever tricky to deal with two different companies like this.

All my contacts with them are totally positive. If I take the cover off a phone pedestal, I put it back on, and we'll leave it in at least the same condition it was in when I found it, and if I can improve it, I'll do that. So, I show them respect, and I get it back. The problem with the one-call, and this was the first thing that I picked up on I guess, is that surveyors have a devil of a time getting locates done because they're not digging. If a surveyor wants to go out for his client and do the survey, they'll want to know where all the utilities are and be able to put them on the drawings for their clients. But when they call the one-call, their ticket goes to the bottom of the stack because everybody knows they're not digging and that nothing is in danger. They just can't get a locate done, not even in a timely manner. So, the first industry that I targeted was surveyors, and I said you call us, and we'll come out and do it.

This really caught on, because not only would we locate the one-call stuff, we would locate the electrical lines that ran all around the properties that were beyond the transformer and any auxiliary gas lines, anything that was buried in the ground. I had an old surveyor tell me, I've been doing this for 37 years, and I've never had a service like this. He just couldn't get over it that we would come out and locate all that stuff for him.

I don't want to be overly critical of the one-call system. But what we would do is show up with a team of locators that were very experienced and who

really cared about finding everything for our client. And it was important to me–everybody has their thing–and finding stuff buried in the ground is mine. When I go on to a job site I feel a challenge, there's a sense of duty to my clients to give them the information that they've asked us for. We will go out there and do what we need to do to get the job done, and people are willing to pay for it.

We talk to a lot of contractors out here in Chicago, and we ask them if they rely solely on the one-call marks before digging, and they almost to a person say no. Often they'll do their own post-811 locating. It costs more time and money, but it's better than hitting the line and paying for it. How do you respond to that? Do you think that post-811 locating is just a necessary evil, or is it just part of safe digging?

Well my thing about one-call locating is, the biggest problem they have is turnover and the quality and professionalism of their workers. Again, I feel a little bit queasy criticizing them, but I'm going to answer your question. They go in and they hire 20 people, and they are young people usually, and on the day they show up for their first class, they have absolutely no idea in the world what is going on. They put them through a school that lasts perhaps four weeks. And they give them a territory and send them out there, and maybe they work with experienced locators for a little bit, and maybe they don't. But suddenly you may call the one-call and have someone show up to do the locating that's only been working for the company for six weeks.

His attitude is not the same as someone from a private locating company that's been run by an old goat like me. I tell my people, you can be the greatest locator in the world and have all the skills in the world. But if you don't care I don't want you. I want to start off with a good employee that really cares about getting it done and getting it done right. Then if he makes a mistake, well, that is what I'm here for: to train him and to coach and nurture him along until he can be trusted to go out on there on his own. Then I can sleep at night not worried about a backhoe out there digging tomorrow, and if my guy located everything.

My company has never been held liable for a damage, and I have never in my locating career ever been held liable. I mean, damages happen for a variety of different reasons, but it's been the easiest money that our insurance companies ever made. When I was last in one of those major companies, I think the turnover rate was around 120% a year. I'm not a mathematician, but that's not good news. So the guy that you are depending on to locate everything, and locate it properly, is probably not very experienced.

Another thing I learned is, usually the best locators in these companies are the newer hires who have maybe two or three months of experience, that have kind of figured out how to do the basic things they're asked to do. Then along the way, there are so many opportunities for them to take shortcuts. If there's a damage, they're not liable for it. They get a reprimand, but it seems that if that guy had been locating for 6 months, they had become someone who would then learn all the tricks and learn how to be essentially irresponsible.

But our attitude is, the client is our boss. If they're giving us work, we're going to do what they say. I feel like I've got the greatest team of guys in the world. We'll talk about our work, I listen to their input, and then I direct their work.

> "I tell my people, you can be the greatest locator in the world and have all the skills in the world. But if you don't care, I don't want you. I want to start off with a good employee that really cares about getting it done and getting it done right." -Charles Hamm

Charles, it sounds like you run a tight ship there and your guys understand the seriousness of the job, but what would you say to a bigger locating company that is still suffering these turnover problems, and that can't seem to keep the younger generation onboard? Does the next generation just not want to get their hands dirty?

You just touched on something. It must be somebody that's willing to go out when it's 105 degrees, or every now and then we get a northern blow in here–it can get cold in winter. You just must be somebody that loves to be outdoors. With the major locating companies, I saw good men initially going in, but the system itself turned them in a negative direction. They would learn that they still got their paycheck whether they did a good job or not or whether they got their work done or not. Everybody that works for Lonestar understands that I'm just the nicest guy in the world, but I uphold a standard. People have come and gone with us.

A lot of it may be generational. In our interview with Justin Maloney of Patriot Pipeline Safety (p. 34), he relayed a story about guys who did not want to work in the rain. They had been taking his classes for pipeline safety and damage prevention, but when it came to being outside in the elements, they didn't want to do it anymore and walked away.

I'm really big on safety, I talk to my guys and nobody gets hurt. What we do is not a real dangerous job, but there are times we get major highway construction projects, and when you get jobs like that, you know traffic is an issue. Then I had a guy one time who was just deathly afraid of snakes. I don't want to get bit by a snake either, but this job will put you in the weeds.

I told him, if you can't walk through the high grass, you know, this may not be the job for you. To that man's credit, from where he was coming from, he has learned to show a lot of courage. He'd doesn't like it, but he'll follow me wherever I go.

Mainly I stayed in the field with the men. That's where I wanted to be, and I felt like that was the most important place–where the rubber meets the road of actual locating. My two sons in laws are in the business now, outstanding young men, and I've pretty much turned everything over to them. At my age, I've become an old goat that's just an old field dog. I just go out there with the guys. I'm the founder of the company, but that's the only title that I'll claim.

"The hydro-vac business really took our company to another level."

"I had a guy one time who was just deathly afraid of snakes. I don't want to get bit by a snake either, but this job will put you in the weeds."

Because you're not going that fast right? You're not feeling the pressure to rush and kill X number of tickets in two days?

Well, sometimes our work stays pretty much crushing. But we're able to get it done with a lean mean staff of people. And we just get out there and get our work done. But you don't have one man starting the day off with 30 tickets or more, by himself with no supervision. Those guys are young and inexperienced. I never felt like the big utility companies or locating companies were serious about preventing damages. It's a question of who's going to pay for it when there is one. Lord knows how many phone lines get cut in Houston every day. It probably wouldn't surprise you, but I mean it's just a daily thing in this city. From my perspective, they're not that hard to find if you have somebody that knows what he's doing and somebody that cares, but that seems to be a hard thing to find in a man nowadays.

So, if you know a big project is coming along, will you try to talk to a contractor and say, hey, don't call in the entire scope of the project? Do you try to communicate with the utilities and contractors to limit your ticket load in situations like that?

Well, I had a company call me back in December, and they had this huge road project down in south Texas. They wanted us to locate everything in the ground for 24 miles. It wasn't a major interstate highway, but it was a four-lane highway all the way along, and there was just stuff everywhere. Every line that you would find that runs the whole distance, you have to walk that whole distance, then you have to do it again.

I don't deal with the one-call that much. I deal directly with the contractors, engineers, surveyors and construction people and tell them, you know, go ahead and call in the one-call. Just do it to cover your butt. But even if they come out and locate stuff, we're going to locate it too, because I don't trust them. And so, if something gets damaged and they've got their paint and flags down and it's wrong, I mean you've got something to go on. There's the liability issue.

But for so much of our work, the one-call doesn't even come into play. For oil fields, putting in a new pipeline easement, there's nothing out there that concerns the one-call. The pipeline companies don't mind if we go ahead and locate their pipelines, put down paint and flags. Now I won't hydro-vac or do any kind of excavation without calling them and talking to them, and they always want to have their representatives out, but the pipeline companies are cool. They don't mind us locating their lines because they know that when the digging starts, they're coming out. But so many of the pipelines are just old and may have been in the ground for 50 years, and nobody has any interest in them–except when it comes to the poor man on the backhoe not getting hurt.

We like to stress potholing, as well as hand digging, as a key part of damage prevention—seeing with your own eyes where these pipes are. Since you've added potholing to your arsenal, have you gotten a broader picture of the damage prevention world beyond locating?

Yes, the hydro-vac business really took our company to another level, and with those fiberglass pipelines in an oil field, occasionally, you want to see them and make sure you're really on them. One of the first things that sometimes shocks new locators, is that nothing ever runs straight. They'll locate a phone line for a quarter of a mile. They look back, and their flags are all over the place. They lose their confidence that nothing ever runs in a straight line. Sometimes they'll put a fitting in, and the thing will turn off the 45-degree angle and it just ropes. There's enough bend and give in it that the trench makes a curve, and they just bend the pipeline along with it. And if you're just probing it, it's easy to miss. We use the hydro-vacs and hydro-probe so there's no danger of really damaging a line. It's great to just be able to occasionally say ok, let's look and make sure we're still on the same line. Locating pipelines in an oil field, they'll come so close or they'll cross under one another. The next thing you know, you're walking out in a whole different direction. You bleed off, and you're on another pipeline.

"After locating the utilities and pipelines in the area, we exposed them with one of our hydro excavation units in preparation for a horizontal bore under the street."

Charles, what would you like to see for the future of Lonestar Locating and for the industry in general? Obviously, we want damages to go down, but what would you like to see in the next 10-30 years as we move forward?

Well, I have a visual of this old man sitting in his rocking chair on the front porch of my cabin up at the ranch. He's sipping on a little Jack or whatever he drinks, and he's sitting there watching his grandkids just running wild all over the place. And that old man is my 11-year-old grandson–he's made his life with Lonestar Locating, and he's in line right now. He can't wait to get out there with us. That's my vision that the company will succeed. I'm 72 now, and I'm still able to work and keep up with anybody blessed with great health and endurance.

But I know my day's coming, and as far as the industry is concerned, one of my real pet peeves is people burying things in the ground that someday, somebody is going to want to know the location of, and they haven't given any thought whatsoever to its being located. In the greater Houston area, I've heard they are going to start putting tracer wires in with PVC water lines, but as of yet, I don't see it. And why in the world somebody would bury something in the ground with no way to locate it ten years later is beyond me. We do everything we can. In the oil fields, they buried these fiberglass pipelines and didn't put tracer wires with them. Nobody has the slightest idea where anything is, and that's been one of the big things that's helped our business.

We had an old steel gas line blow one time, and it blew a hole in the ground and gas was shooting way up in the air. It sounded like a freight train. They called us, and said we've got to have you out right this second as fast as you can get here. And they told me what had happened, and they said nobody knows where to turn it off. There's a valve somewhere. We need you to locate that line back to a valve. So, it's things like that. Some of it is an issue that comes from another era. But at this point in the construction industry, serious thought should be given to the fact that these lines may need to be located that they're burying today. But they don't do it.

The utility companies I think should be willing to pay these locating companies enough money that they can afford to upgrade the level of service that they provide to prevent these damages they're having. As it is right now, as I said earlier, you just take some kid that's been in the field for two weeks, and he's out there by himself locating something, and things get damaged. The supervisors are never around, or they never were, in my experience. I don't know what they did for a living, but they weren't out there with us when I was learning the trade.

We've heard tracer wire described as the cheapest form of insurance you can buy, and it's the first thing that gets cut out of budgets because it's so cheap.

It would just make it so easy! How much would a little wire cost down in the trench with that PVC water line or any number of things? We do a lot of work on private property, and these companies will lay in fiber–it's their own fiber, and its unlocatable. Then they call us out there and want us to find it. It's a funny business. You know, I tell people I'm not a witch. There are things in the ground that just can't be found, but we're going to make the best effort we possibly can. If we don't have something metallic, if we can get a fish tape started into the conduit, we'll find something in there and then locate that to give them an idea how something runs. We do everything humanly possible to find the lines. It's labor intensive, but we feel like if we can't find it, then nobody else will either.

Patriot Pipeline Safety: One Man's Vision for Pipeline Safety Training Excellence

Justin Maloney, founder of Patriot Pipeline Safety

Justin, give us a quick rundown on how you got into the pipeline industry, your pathway to where you are right now.

Sure. I started with ONEOK Partners which is based out of Tulsa, Oklahoma and I started at the bottom level in an Associate position. My job was general maintenance of the pipeline compressors and valves and the operations and maintenance of a 30-inch natural gas pipeline that ran 365 miles. I was in charge of about 16 miles of that 365 miles and was involved in two mentor-mentee programs that ONEOK offered. One of them was with a gentleman named Leonard Todd who was an old director from Enron, and another one was with a gentleman named Lester Burt, an operations technician and pipeline operator for 38 years. Both these mentor-mentee relationships had a profound influence on my career.

Lester taught me a lot of the field aspects of how to operate and maintain a pipeline: how to work on the compressors and tear apart valves and understand how gas flows through the line. Leonard taught me a lot about the business aspects: business etiquette in regards to understanding personalities, understanding body language and communication. He taught me how to be an eloquent and elegant professional. So, it was a very good mix of education for me at such an early age.

> "What you learn on these pipeline right-of-ways, it's so valuable, because it's not something you can go to school for and learn it in its entirety. You're compensated financially, but you sacrifice a lot personally. So it is a give and take." *-J. Maloney*

So how old were you when you started with ONEOK?

I was 22 years old when I started there. I spent the first half of my career working on very large compressors and Solar turbines. I also worked on valves and did other operational things such as running PIGS, which are called pipeline integrity gauges. They inspect the inside of the pipeline. Then I slowly moved up the ladder to Multi-Skilled Technician and eventually Crew Leader. My introduction into the construction part of the industry came when ONEOK utilized a company called Minnesota Limited to do all their construction in their station. So I was always working alongside these pipeliners in the field when they would do modifications to some of our stations. My working relationship with them grew stronger and stronger over the years.

In my mid 20s I started a family, and at about the same time my daughter was born, Minnesota Limited called me and asked me if I wanted a job in the Bakken Shale and the Bakken oil fields of North Dakota. And I accepted it. That's when I started work on a main line spread, and I met another two gentlemen that became very important mentors. One was Mike Buric, who is now a general superintendent for Minnesota Limited. And the other one is a friend, James Redmond, who is now a superintendent for Minnesota Limited.

What year did you start with Minnesota Limited? What experience did you gain there?

I started in 2012. Mike and James started breaking down the fundamentals of the assembly line process to build a pipeline. And I started picking up the different disciplines that it took to construct a mainline pipeline. And along with that, I picked up experience in the maintenance of these mainlines that ran operations. So I got a very good background with the construction part of things, and that's always a continuous improvement in one's career. I don't think that you should retire knowing everything. I think that it takes continuous discipline to teach yourself more about the industry, because materials change, practices change, equipment changes, standards change, client requirements change and environmental regulations change. You're always evolving as a pipeliner.

As part of my tool belt now, I had gained experience in pipeline operations and pipeline maintenance, and then I started to further my career in pipeline construction. From there my career just started to progress into the quality and safety of pipelines under construction, and that developed into further relationships with Precision Pipeline, with Enbridge. When I started with Enbridge in 2013, that's also when I started Patriot Pipeline Safety.

So explain how that worked. You were working full time with Enbridge, but you personally created Patriot as a side venture?

Yes, I wanted to address multiple things that were affecting the safety and quality of pipeline construction that were not being addressed and still to this day are not. I wanted to fill the training gap for new professionals in this industry. In the mid 80s when work was slow, not a lot of new people were coming into pipeline construction. As a result, we are now suffering the consequences, as the baby boomers continue to retire. We don't have the time, nor did we have the time, to fill those shoes–to help new workers entering the industry quickly gain the experience that these older pipeliners had gained over so many years.

And this has occurred at a time when work is extremely busy, experience is extremely hard to come by, and curriculum that solely concentrates on pipeline construction, lacks in detail. So I wanted to provide an answer for a younger pipeliner and say, "Here. You can take this training and this is going to deal with exactly what you are going to look at on a pipeline right-of-way under construction." And that was the creation of Pipeline Construction 101 in 2013.

And that was part of your company, Patriot Pipeline Safety, correct?

Yes it was.

So was there one specific incident or accident that happened that just made this click where you thought, yes, there is a need, there's an absolute need that's not being met in the industry right now, and I'm going to fill it. Or was it just noticing in general these gaps in knowledge, gaps in training, that made you want create something like Patriot Pipeline?

It was a general lack of knowledge, in training, for green hands new to the pipeline construction industry. These young women and men are being hired by these pipeline contractors, and the only training that they have much of the time is a simple 30 minute to one hour orientation by the contractor. Then they're thrown onto this busy right-of-way with thousands of pounds of moving equipment and a thousand different hazards that nobody has told them about. So Pipeline Construction 101 was designed to offer a free tool to understand the industry better, before or once they got there. The course will help them understand better what they are working around.

Explain what else Patriot does and how it's evolved over the years.

So I started to design and build custom damage prevention plans for contractors in the United States to train their foremen during form and competency training and to train all new employees that were coming on to their projects. These damage prevention programs dealt with exactly what they were going to be working around: how to avoid line contacts, how to recognize the landscape for foreign and unknown utilities, how to understand different types of sweeps with locating equipment, the process of the one-call and how important it is to have the information onsite, and then how do we convey all this to new employees?

Picture from a ground patrol carried out in east Texas. While assessing the right-of-way for this 10" pipe, heavy debris were discovered that caused coating damage. This was a result of heavy rains washing the debris off creek banks and coming into contact with the exposed pipeline. The erosion happened in a densely wooded area near a single lane bridge. It's another type of environment aerial surveys cannot see.

And that's where you capitalize on the importance of the discussions that take place in the JSAs - the Job Safety Analyses. I gave them that training, and then I also started to build comprehensive quizzes on the knowledge. So it became a source of information for them for the industry, but it also held them accountable for understanding how important it was. These tests were required as part of the competency training for the foremen. And sometimes, depending on how the contractor wanted to use them, they were required for new employees.

I have also done some technical advising for a couple legal firms on pipeline construction accidents: the pros and cons, the facts of how the equipment is used, why it's used, and the safe or unsafe ways to use it. My strongest suit is field consulting. I work with pipeline contractors and all of their foremen and employees, and I work with an open door and an open book. So when I go out there, I'm not very authoritative. I'll take new employees and foremen and say, "Have you considered this in your plan today? Keep in mind as you dig through this trench, this is going to widen with the sand putting the pipe closer to the trench. Let's make sure nobody stands between the trench and the pipe. Watch your radiuses with your track hoe because of this activity coming up." So I get into the real technical aspects of pipeline construction as well as the safety and quality factors that go with those details that are that are so little spoken about.

Talk to us a bit about the pipeline industry in general. What are some of the biggest issues that are facing the industry today?

I think the largest threat to America's pipeline infrastructure is terrorism. I think that it's tremendously overlooked and little understood. I think that there's room for improvement to recognize the vulnerable areas in our operating pipeline infrastructure in the United States today.

Is this something you've heard from law enforcement groups? How exactly are we exposed?

There is room for improvement to build the relationships between pipeline operators and organizations like the Transportation Security Administration. There is a lot of room for oil and gas companies that operate these pipelines to improve on ground surveillance, to get an in depth look of not only the quality condition of their assets, but to conduct detailed security assessments while carrying out those quality and safety inspections.

Here was a pipeline patrol Patriot Pipeline conducted on a gathering system in east Texas. They developed a comprehensive report to identify security vulnerabilities, corrosion detail, quality assessments, and CFR compliance assessments.

So there's opportunity for training pipeline operators to understand these vulnerabilities and to be able to recognize them while they're maintaining and operating pipelines. And that's for the operations sector. There's a tremendous amount of room in the construction arena to understand forms of eco-terrorism, vandalism and trespassing by protestors, and that goes into understanding how to secure a site. It goes into understanding who are your most vulnerable crews. You have to understand that the opposing party that is against your overall goals of building that asset may have advanced resources.

So how do you understand where your most vulnerable areas are? How do you plan for that in advance? In doing so you're protecting the integrity of your company's name, and you're sustaining those valuable relationships with your communities that these assets serve. And you're also securing the good name and relationship of the client that you're working for and your own company. We as an industry, both in operations and construction, are just now starting to address this, though more reactively than proactively.

So you're saying we should be more proactive with things like ground patrols. Are people relying too much on drones and unmanned aerial reconnaissance?

I think that we suffer from not allowing room in our fiscal budgets to accommodate detailed, effective ground patrols. The FAA has certain rules that make the use of drones impossible with pipelines. You can only cover so much ground, it has to be done with multiple people, or you can't fly them over people under certain areas the pipelines run through. The pipelines can't be close to an airport or be in a shared corridor with electrical transmission lines or also own electric in the same right of way. That knocks drones out of the picture. So boots on the ground is the best pipeline assessment for security, surveillance, safety and quality, and there is room to improve on that in this country.

Going back to terrorism, is the bigger issue more homegrown terrorism? Or are we talking more about foreign terrorism, countries that are trying to kill Americans and do damage to our infrastructure?

I think it's both, because a lot of these pipelines are operated by SCADA systems–Supervisory Control and Data Acquisition systems–and those can be hacked into from anywhere. How you operate a pipeline is very similar to how you would operate a pipeline in a foreign country. So the threat could be foreign or domestic to these forms of infrastructure. But it's understanding the vulnerabilities that might have a domino effect.

If you hit a certain mainline valve, if you understood where you could do the most damage because you understand how a pipeline operates, you're not only talking about risking the integrity and safety of the pipeline in operation. You're talking about shaking societal stability if you interrupt a crucial resource that's needed at a certain time of the year. Also, the location of where you interrupt service can impact refineries, bridging or other forms of critical infrastructure such as runways or railroads. It's in putting these pieces together that there's room for improvement. In every system in this country it's different, but you can only put those pieces together if you get out and look at your system.

I think the second most important case for ground patrols is in helping you

address real time conditions of your utilities. A big danger we have to our nation's infrastructure is the integrity of it. Much of it is crumbling. We don't know how much, and we don't know exactly where, for multiple reasons that so many companies face. And it's not their fault, we're not blaming them. But when you deal with things such as buying assets, you're buying a bulk of assets.

Sometimes companies don't know everything that they have purchased. You have retired pipeline operators and retired pipeline owners that had records that went with them during retirement. You have infrastructure installed that was never mapped, or it was improperly mapped at the time. You have internal breaks in communications between departments that result in a lack of information to properly assess utilities. So you may only be given 65 percent of what actually needs to be looked at and maintained, because the information just doesn't exist. It's such an old utility, or Bob retired 12 years ago and he was the only one that knew about these 14 miles. Or some of them were never installed with any tracer wire, and they may be in a shared corridor, which then interferes with the frequency and accuracy of your locate because of the way technology uses electric current.

All these factors play into the integrity of our nation's infrastructure. Environmental damages, shallow pipe, things of that nature–so much of it is preventable if we just walk these right-of-ways more often with trained personnel. Then they can point out, there's a shallow pipe here, an exposed pipe in this creek bed, vandalism at this meter station, and so on.

What are your thoughts on mapping when you're working on these projects? Do you feel it should be more readily available, or does that go back to concerns over terrorism?

I don't think there should be a national pipeline mapping system. I don't see the benefit, because when you're working around them, only the company has resources available to share with you and that you can directly ask for. I don't see the benefit in offering a tool to somebody with malicious intent that may know how to operate or understand the fundamentals of the specialized equipment such as mainline valves, laterals and heaters. There's enough markers to understand generally where most utilities are, and then there's enough contact information for somebody to get more details. Why throw another tool out there to add to the vulnerabilities that already exist with the SCADA systems used to operate these pipelines.

Are we going to see a busy next couple of years or even decade or so of pipeline construction and maintenance with an increase in business activity? Is it just going to become more and more difficult to keep pipelines secure?

Yes, it is going to grow in difficulty to keep these forms of infrastructure secure. I think that construction is approaching what this country needs in regards to oil and gas as a resource. However, there's still going to be a sustainable amount of construction work in the maintenance area to upgrade

This scratch was discovered during an excavation on an existing 12" natural gas line. The pipeline was excavated where the scratch was discovered and reported to the owning client. It is unknown when the scratch occurred or how. It is suspected that the damage came from a tiger tooth on a bucket or an improperly installed flat bar welded on teeth. Area work was halted and repairs were scheduled immediately. Unknown metal loss amount. Unknown remaining wall thickness.

and maintain what already exists. But so many big projects have taken place in the last five years. It's really pulled from the available resources in the Bakken Shale, the Marcellus Shale and the Eagle Ford Shale. We've answered the call for more infrastructure in this country, but we still need to do a lot of work in maintaining what we already have in service.

What percentage of pipelines are above ground versus below ground, and what are the challenges? You've mentioned underground pipelines can become exposed due to soil erosion, but some of the pipelines are above ground as well.

I'd say maybe three to six percent of our nation's pipeline infrastructure is above ground. All you have above ground are your mainline valves, your meter stations, your launchers and receivers and your lateral intersect points. The rest of it's all below ground. Standards have changed over the years. Yesterday's pipelines had to be installed at shallower depths. And that is because of lack of regulation when they were installed, and available equipment in that day and age. Some of these pipelines that were installed three to four feet deep–when you add on 40 years of weather, rain, flooding, erosion, storms, winter freeze and thaw–not only does erosion occur, but things that are in the ground start to damage the pipes. Quality standards were all so different in the past.

Today we have to backfill with severe limitations. There's no rocks allowed much of the time. There has to be a solid bedding for the trench, and then the backfill has to be a foot and a half to two feet of nothing but fine grade material to surround that pipe and protect the very valuable coating. In the past, if you dug rock out of the ground, that's what you'd backfill with. So as the freeze and thaw cycles occur in this country, especially in the North and Midwest, these rocks and debris and garbage move underground. Pressures are created that push these debris and rocks against the pipe, causing anomalies.

So that's one reason for the increase of anomaly digs in this country, and it's a good thing to be taking care of it. The coating was different back then. So as things are exposed to water, rain and other external factors with weather, coating deteriorates and rust occurs. If the pipelines are not maintained through a good integrity program that oil and gas companies should have, they will start to decompose naturally. That's corrosion, and many companies don't have a very proactive quality control program. So your infrastructure starts to rust, and without inspecting it, you don't know that. In the way it's designed, some of it may not be detectable externally, and so you can't pick up on the internal damage, and then it ruptures.

Does anyone have any estimate or even a ballpark guess at the percentage of these pipelines that are deteriorating and that need to be replaced?

Yes, I would probably look at INGAA for that, the International Natural Gas Association of America. And I would look at AGA, American Gas Association. And maybe even the CGA would have some statistics.

What about PHMSA? What do you see as their role in all of this, and do you work directly with them? Talk to us a little bit about federal oversight when it comes to pipeline safety and pipeline integrity.

Sure. I do cross paths with them a lot on many projects and begin to get a better scope of my audience that I deal with. Whenever anything is government or public like that, all the information for the higher requirements is also public. PHMSA's biggest requirement to be a pipeline inspector is you have to have an engineering degree–usually structural or civil. An engineering degree is a great asset to have in this industry, but without working field knowledge you really are not making a full assessment. You might be given a checklist by PHMSA, and because you have a degree you go out there, and you're able to identify some really obvious hazards or vulnerabilities. But unless you have served time working on pipelines, building them, understanding them, you might be seeing 20 percent of what's actually in front of you.

So I think the technical requirements to work for PHMSA could be improved, and then validation of those years of service in the pipeline industry. To become a pipeline inspector for PHMSA, all you need is a civil engineering degree. Of course, increased hiring of inspectors looks good to the public because, "Hey, the government hired more people to watch the safety and integrity of the pipeline both in operation and construction." Yes, but they hired the cheapest guy out there. That cheapest guy is a kid right out of college with his civil engineering degree who has never seen pipes get put in the ground.

You talked earlier about the generational differences and the baby boomers retiring. We've seen this a lot in the locating industry with trouble hiring younger people who just don't want to do this sort of work. We assume that you have similar problems in the pipeline industry? How do you attract younger people to the business?

I think very recently it's come to light that the younger generation is dissatisfied with what they were told about what they were going to get out of life with a college degree. And this has also occurred with a lack of accountability for people's actions. That affects work ethic quality. So we do struggle within the industry in trying to find reliable, dependable people who want to learn, because it's not easy to work outside in the elements all day, to go home dirty every day. But you make a really good living doing it. We're losing that grit, that integrity in America's young workers to withstand that type of work throughout the day and to have the desire to do it in the first place. And when you do find them, you've got to hold on to them. In general, we have more success with young men and women that grew up on farms or that were involved in sports teams, than we do with people from more populated areas. The kid that grew up playing in the woods in upper Michigan is going to be more durable on a construction site because he or she is used to that environment.

We had some workers recently that were new to the industry that did show up on time, that did come to work, and they were interested when the weather was nice. But as soon as it rained--no lightning, no thunder, just a spring rain, they refused to work. But you know, it is a reward. It's a sacrifice, but it's a financial reward. And you're also learning a skill that is not taught

A 30" being installed in a highly congested area. The concrete casing and foreign utility were never located previously. This is why a second locate 3rd party practice is so important.

> "Pipelines are built on relationships. That's very important. Slow is fast. Steady is safe. Those are the things that I try to work and live by. And you're only as strong as your weakest link." *-J. Maloney*

Advising best practices for construction in shared corridors with clients who operate both electric and gas in the same right-of-way.

in its entirety in any university or trade school. What you learn on these pipeline right-of-ways, it's so valuable, because it's not something you can go to school for and learn it in its entirety. You're compensated financially, but you sacrifice a lot personally. So it is a give and take.

Aside from the work itself which can be considered difficult or physically demanding, how do you deal with the bad perception that follows the pipeline industry in the media? How do you combat bad feelings that people have about the pipeline industry in general?

I'm really glad you asked that question. I think it's a question that should be asked more often. Our railways, roads, airlines, waterways–these have all been built in large part by American hands, American engineering and American strength. We'll build anything you want. We didn't make the decision to create a society solely dependent on oil and gas. We're simply constructing what the demand is out there. If you want to go solar, we'll build you solar fields. If you wanted to go strictly natural gas because of the emissions, we'll continue to build pipelines, but just natural gas ones. We didn't create the demand, although we do contribute to it like 99 percent of Americans in this country.

I can speak for the entire industry with several conversations under my belt and pilot projects under my belt from protests. I wish people would educate themselves more on what they're protesting before they come out and vandalize the equipment, try to physically harm workers, try to deteriorate the integrity of the company doing the construction. If they did, they would realize everything that they're involved with in their lives is touched by oil or gas. And it makes them look really foolish when they're protesting you with shoes on their feet. They drove a combustion engine to the protests, there's tires on that vehicle, there's buttons on their shirt, there's the markers they used to write those profanity filled signs. They all took petroleum to make. Without that this country stops moving. And until we together as a society make the conscious decision to move forward for a cleaner environment with everybody on board, the workers in this country are going to construct with the demand is.

What are your current goals for Patriot, and where would you like to see your company be in the next 5 to 10 years?

First and foremost, I would like to see more collaborative efforts between Patriot Pipeline and oil and gas companies to improve ground patrols and to improve pipeline security and surveillance efforts across the nation's pipeline critical infrastructure. I still also want to be heavily engaged in field consulting on pipeline construction projects. I think that we've made tremendous headway in training tomorrow's generation pipeliner to better recognize the hazards associated with today's industry and constructing pipelines. I want to continue that movement, continue that momentum. As for myself, I just want to do whatever I can while I am still young enough in this industry to leave it better than when I found it. That's why everything is free that I try to do. I have thousands invested in this curriculum that I give away at no cost. I just want to say, here this can help you. I've lived it, I've been through this thing and know what you're going through, and I was in your shoes once. I wish this existed when I was your age. Here it is. If you want it, it's free. It's here to help you.

As we wrap things up, is there anything else you wanted our readers to know?

Pipelines are built on relationships. That's very important. Slow is fast. Steady is safe. Those are the things that I try to work and live by. And you're only as strong as your weakest link.

Visit www.patriotpipelinesafety.com for more information about Patriot Pipeline Safety.

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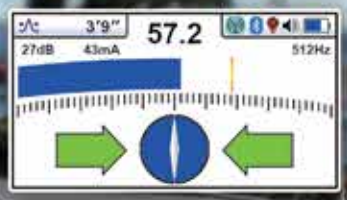
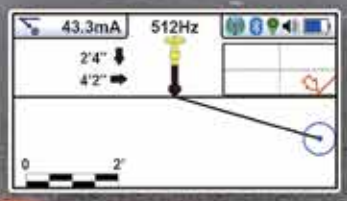
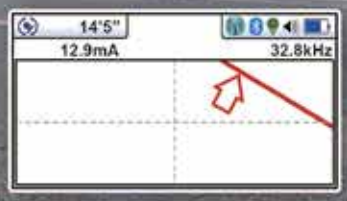


Classic Screen

Sonde



Vector Locate
(Lateral Position & Depth)



Plan View

vLoc3-5000

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- **Offset vector locate mode**
- **Optional receiver/transmitter link**
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