

### **The Stakes Have Never Been Higher**



s we covered in the previous issue of American Locator magazine. a devastating explosion caused by a ruptured underground gas line destroyed much of downtown Sun Prairie, Wisconsin, killed one firefighter, and injured ten other people on the scene. While we knew that a subcontractor installing fiber optic line was the one who hit the line, the cause at the time was still uncertain. Now, a search warrant that was filed on July 27th in the Dane County Circuit Court (17 days after the explosion) was finally unsealed on October 17th, and American Locator has secured a copy.

The warrant was filed and secured to search the public right of way and the street for any evidence that could support a charge of reckless second-degree homicide for the death of Captain Cory Barr, the Sun Prairie firefighter who was killed in the explosion. The warrant states that a contract utility locator failed to correctly mark the gas line under the street, marking instead a spot about 25 feet away, where there was no underground gas line.

The unsealed court documents and affidavit go into great detail about the circumstances leading up to the underground gas line gas strike. According to the subcontractor that struck the pipe, the firm for which he was working did call 811 (Diggers Hotline in Wisconsin) on July 9th, one day before digging, and told him that it was ok to go ahead and start the horizontal directional digging project. On July 10th, the day of the line strike, the subcontractor looked over the locate marks made by the contract locator and formulated a dig plan. He also said that he had spoken with a supervisor of a different HDD company working nearby, and that they had discussed the locate marks on the pavement. That supervisor then made a call to a locating employee to discuss the marks, leading the original subcontractor to believe that everything was marked correctly, and allowing his to begin his dig.

After the workers began to smell a strong gas odor, the head of the subcontractor crew took a picture of the northwest corner of the intersection of Main and Bristol, where there were no marks. Investigators did later con-

firm that there were no markings indicating a gas line on the ground above the area where the subcontractor struck the gas line, and instead, there was a vellow painted mark on the sidewalk about 25 feet to the north of the damaged gas pipe, where no gas line was located.

All city officials, the District Attorney, and officials for the contact locating company involved in the explosion initially declined to comment on the warrant and the case in general. The worker who did the locate for the locating company was named in the warrant, but not in the press covering the incident. He has also declined to comment on the case and has secured a criminal defense attorney.

### **New Developments**

The locating company that made the initial marks, and the supposedly incorrect marks leading to the July 10th explosion, released a statement in light of the revelations made by the unsealed search warrant and affidavit. First, the locating company asserted that they have "assisted all investigative bodies with gathering the correct information to further its mission of educating all involved parties as to the safest excavation practices." This seems to conflict with the statements in the search warrant, which claimed that the company officials would not talk to investigators, and instead referred them to an attorney.

But more importantly is their claim that the subcontractor never called 811. "With regard to these media reports, one immediate and important correction is that the damaging excavator never called the 811 Diggers Hotline to report that it would be excavating in the location of the incident," the statement read. "This is a clear violation of Wisconsin law." The key word here seems to be the "damaging" excavator, as the subcontractor has claimed many times that their master contractor called Diggers Hotline before digging, but apparently, they themselves (the subcontractor) did NOT call the number before digging.

To the everyday citizen, common sense would say that this is a negligible point, but the one-call law is very clear that anyone digging underground must call 811 before digging and cannot rely on hearsay to assume that the call was made. The affidavit also claims that "(the subcontractor) removed concrete and earth to expose the intersecting underground utilities that he was passing with the horizontal/directional boring equipment." But it doesn't say how many times they potholed, and if they exposed every mark. In theory, if they had exposed the incorrect mark down to their excavation line, they would have known something was wrong, as the gas line was not where the locator had said it was.



### More Fiber, Same Problems

But do all these sticking points, and murky areas between the law and "best practices", and inevitable months and years of finger-pointing and liability avoidance that will follow mean a damn thing to the widow and fatherless children of Cory Barr, the firefighter killed in the accident? Do they care one bit about who actually called 811? Or that a utility refers to their own maps as "guidelines for locators"? Do they want to hear that the contractor basically did the right thing, but not quite enough to prevent this fatal disaster? No, I don't think that they do.

And now, as we are going to press, I am hearing of yet another gas explosion, possibly caused by a ruptured underground gas line hit by a crew installing fiber optic cable, in Aurora, Colorado. Apparently, the explosion and subsequent fire destroyed a multi-building retirement community, killing one person and injuring two others. We'll provide more details about this incident for you next issue, but right now, it appears that we will have one more grieving community to add to the list of places like Canton, IL and Sun Prairie, WI.

As always, feel welcome to send us your comments and responses to this editorial and any of our articles on this or other subjects. Email matt.streets@planetunderground.tv.

Left: Map of suspected hit site of gas utility line in downtown Sun Prairie, WI and page from unsealed court documents regarding the case.

### FILED JUL 27 2018 DANE COUNTY CIRCUIT COURT Memorial to fallen firefighter Cory Barr in Sun Prairie, WI.



## Scene 1 A 3D Universe

The Jefferson St. bridge in Joliet IL, site of the ASE LIDAR survey

his October, the Planet Underground team went on some interesting video shoots involving impactful new technologies and best practices in the damage prevention industry. The first site was in Joliet, Illinois, filming American Survey & Engineering (ASE) doing a LIDAR scan of a 100-year-old bridge spanning the Des Plaines River. Next, we traveled to Mahomet, IL near Champaign to check out URG's new locate audit program they've put in place for Ameren Utilities (p. 10). On that same trip, we had the good fortune to see UTTO's new Locate Assurance<sup>™</sup> locate tech training application in action (p. 14). As the tech is going about the process of finding underground utilities, data on that process can be transmitted from the locating device to a supervisor on or offsite and plotted in real time by simply clicking a button on the device.

American Survey & Engineering uses LIDAR for a wide range of applications, from installing underground utilities, to scanning underwater surfaces where pipes need to be laid across a riverbed. Of course, they can scan just about anything above ground as well, and that is what they were doing to the Jefferson St. bridge in Joliet. We had the pleasure of talking and filming with Kris McAllister of ASE who was able to break down the scanning process. First he explained that the bridge needed to be rehabbed due to its advanced age, around 100 years, and the primary interest of the rehab was its track and track plates along the bascule arms of the bridge. The process for scanning was somewhat standard to a typical LIDAR survey, but here they must make sure to get every inch and detail of the bridge so

that engineers can properly evaluate it. The scanner they were using was a Leica P-40 model, and in order to get a complete, accurate scan, they set up targets all along the bridge at four different points: some of these points are geo-referenced, and some are on known horizontal controls. They run a 3D traverse and differential leveling to all their controls, and then take that data to the office and post process it after download from a data cloud, extracting all the key features needed by the client so they can efficiently fix the bridge.

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LIDAR survey is one of the most prominent technologies of the future, and more and more companies are seeing the usefulness of it. In this particular instance, ASE was hired to do a digital scan of every point on the bridge so that their client didn't have to send guys out there every day for weeks at a time to plot all of this data. Before LIDAR technology, crews would have to literally climb on top of the bridge and physically measure out beams and girders. Kris told us that the Leica P-40 can scan sections of the bridge in just ten minutes, something that used to take up to four hours in the past. It's extremely advantageous to the clients, because when all the information is extrapolated from the cloud, they can easily go through the 3D images and pick and choose what they need to properly address any issues. As use of 3D LIDAR scanning grows with drone LIDAR scanning and underwater surveying, it is certainly something to pay attention to, and it can be used for any industry to locate important structures that need to be identified, such as underground utilities in highly congested areas.

Kris McAllister of ASE sets up a spot for a control target along the arms of the bridge.

2 ANA

Aligning the target



### RLANET UNDERGROUND.TV Scene 2: Audit in Action

Adam Daugherty explains the process he'll take for the audit of one-call locate marks.

Ur filming of the demonstration audit done by Utility Resource Group (URG) for Ameren Illinois took place in a cul-de-sac of a residential area that 811 contract locators had marked with flags prior to our arrival. Adam Daugherty, URG locator, showed us a typical audit he would perform in that area, using a live hook-up to a residential gas meter to double check the 811 marks were in the allowable tolerance that Illinois law permits for an Ameren gas line. Another interesting side to this process was that Adam was trying out UTTO's new software application, Locate Assurance<sup>™</sup>, that could track the movement of the locating receiver to indicate whether a person was using it correctly and to its fullest potential. URG was undertaking test piloting of the software on Ameren territory during this audit demonstration.

The software is an end to end user application that allows the locator to grab each piece of information on the receiver, capture and score it, while creating GPS points that get sent to the cloud to be viewed in real time. Literally with a click of a button, your team in the office can see if their locator is properly and best utilizing the receiver, and most importantly, stopping a possible damage from happening before it's too late. That application is something unlike we've ever seen before, but seems such an obvious benefit and return on investment for safety and training given today's burgeoning cloud technology. Ameren is doing something that every utility

should do, going the extra mile to ensure they don't have any damages caused by mismarked lines by conducting locate audits. URG is the company they chose to perform these audits because of their outstanding accuracy statistics and their overall knowledge and experience with all utilities underground. To conduct a hook-up audit, the locate tech goes through the same steps as the one-call locator who originally marked out the line: the tech hooks up to the meter and relocates the line to make sure the results match up. Although this may seem simple and repetitive, the overall value of even one set of marks being off and corrected by the auditor is invaluable, and potentially life-saving. The potential to avoid potentially tragic consequences more than makes up for the cost of having an auditor go out and double check the marks.

You may ask yourself, why does a utility need to go to such lengths just to ensure a utility is located properly? The answer is probably more complicated than can be put into words for this article. One possible answer is that the underground utility industry has been facing a serious worker shortage, not only with well-trained locators, but trained excavators as well. A positive note is that companies like Ameren Illinois realize that standards have been changing and must continue to change for the benefit of the public and the utilities, and best practices like this can start a progressive trend that hopefully will be picked up by municipalities, regulatory bodies and everyone in the industry.



Alleren BURIED

A locate ticket had been called in for the demonstration to mark existing gas lines.

W J. W. BEL TOWN YOU WANTED

THE CONTRACT

Hooking up to the gas meter at the residence selected for the audit





Locating Technology

# SSUR ANCE

By: Alan Haddy, President, UTTO Inc.

### What makes for a successful locate and mark operation—technology, skill, or behavior?

Send a pro golfer to Pebble Beach with nothing but a rusty old 7-iron and pit him against an amateur with the finest golf clubs money can buy. The pro would win-every single time -because he has everything working for him: the right motivation, the best training methods, situational understanding and his learned skills. Fact is, he's got the repeatable swing that an amateur doesn't, negating the equipment as a determining factor. Now, imagine a scenario in which the pro goes out with cutting edge golf technology-it wouldn't be a fair competition.

Utility locating is no different, except mulligans (a second chance) aren't an option and the stakes are much higher as people can be injured, or worse. Given the inflexible laws of physics, the equipment, while important, is not the main contributor to a successful locate. And it is an inconvenient truth that only a small percentage of field technicians today really understand and practice the optimal craft of locating. This should be our aim-to take the focus away from fancy field equipment with confusing features, and instead, hone in on the behaviors and skills of our workforce in the ield. After all, it's not the equipment that protects buried assets. Rather, it's the learned skills and behaviors, dedication, and peak performance of our locate techs that get the job done with equal parts accuracy and confidence.

Until now, there has been zero visibility on locate tech activity and no way to measure performance or skill in the field, and if you can't measure it, you can't improve on it. This leaves technicians frustrated, supervisors and

"It's not the equipment that protects buried assests. Rather, it's the learned skills and behaviors, dedication and peak performance of our locate techs that get the job done with equal parts accuracy and confidence." -Alan Haddy

Background: URG was undertaking test piloting of Locate ssurance on Ameren territory during a recent locate audit demo covered by PUTV. Adam Daugherty showed us how the software seemlessly integrates with his locate device.

### **D-** ( Q | K | 2 UTTO

Field technician - Joe Goodman (inestitieidservLcom)



Above: Managers can access their dashboard to see a performance score report detailing an individual technician's performance on locate assignments.

managers at their wits' end, and perpetuates an industry that desperately But now, Locate Assurance gives us a way to measure and optimize field lacks accountability and oversight. As PG&E's President and COO Nick Stavtech performance. As a Field Supervisor or Operations Manager, you are ropoulos famously says, "We cannot fix, what we do not know." equipped with the metrics that matter-the quantifiable data that gives you a crystal-clear window into your field techs' strengths and weaknesses, with Working with industry leaders like AT&T, PG&E and other industry thought all of that intel organized and packaged in a way that makes it easy to incentivize top performers and re-train those who need a refresher course. Think of it as an end-to-end digital solution that enables you to virtually tap into and replay every locate, every time.

leaders, UTTO has pioneered a way to make this happen. Locate Assurance™ seamlessly leverages technology to empower utility companies with critical information via a powerful platform that helps significantly reduce buried asset damage, resulting in substantial cost savings along the way.

### This is a critical moment in time.

UTTO's innovative module (patent pending) seamlessly connects to a new Today, up to 40% of asset damages are related to insufficient locating pracor existing locate device-and when a locate is made and marked-a replay tices. The societal costs alone are closing in on \$2 billion per year, and huof everything that leads up to the locate point is captured. Managers can man safety and health concerns are ever increasing. As underground conthen access their dashboard to see a performance score report-an assessgestion increases and the hand-dig exclusion zone around a paint mark is ment that includes crucial insights such as session location and time, a reincreasingly being challenged, the stakes have never been higher. play of target tracing and pin-pointing technique, the quality of a transmitter hook-up, device modes selected, aggressive swinging motions, correct Unfortunately, poorly-trained, unmotivated techs with lone wolf techniques target alignment and a plot of the locate path. Finally, the dashboard analylocating and marking utilities in the field is an everyday occurrence that has ses and organizes the metrics into simplified, actionable reports whereby been long tolerated because there has been no practical alternative. When instead of receiving no data or reams of raw data, Locate Assurance delivers the paint hits the ground, we hold our breath and hope for a successful a finished product that details the individual technician and team perforlocate. Sometimes we get it right, while other times we learn the hard way mance on locate assignments. This allows for immediate feedback, tightenthat "close enough" is simply not "good enough." ing up of loose ends, and dramatic improvements across operations since

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### **UTTO Locate Assurance**<sup>™</sup>

every locate can be audited. If any retraining is deemed necessary, the UTTO Locate Training Simulator can then measure and support performance to keep your team in optimal shape.

### Measuring performance where it matters.

The technology is tailored for different applications, from accuracy for those who oversee mapping and survey crews, to guality and productivity for inhouse or contract locating crews.

For survey mapping, the managers will have access to the data that proves and validates the quality of GPS points-what the locator did, or did not do! After all, there is little value in an expensive 6" GPS capture point when the locate process used to determine the position of the capture point has an unknown quality and tolerance.

Contract locators too, can rest easy with eyes in the field. They'll know whether their locate tech actually exited the truck and completed a locate, where it was located, and whether or not best-practice locate standards were followed. On top of that, they now have the missing pieces to the on-site productivity puzzle, updated daily.

If knowledge is power, as they say, Locate Assurance can be the power-play that wins the game, allowing one to keep a finger on the pulse of what's happening in the field while significantly reducing or eliminating costly damages.

### To be more specific, UTTO's Locate Assurance enables you to:

- Evaluate and gualify locate performance against your best-practice criteria with technology-backed data as opposed to subjective human assessment.
- Gain peace-of-mind with unbiased proof of performance in the event of a damage.
- Support field techs with personalized performance metrics, which assesses their skills and weaknesses before an incident occurs.
- Develop a scoring system and leaderboard, encouraging friendly competition that leads to a boost in morale among technicians.
- Implement incentive and certification programs based on actual data.
- Fundamentally change field-tech behavior to get a guality locate every time.

### Embrace tools that can upskill the industry.

It's time to ditch the industry's status-quo and break away from business as usual, rewarding good and retraining bad. Take a minute to ponder the improvements in efficiency and quality of your operations that can be achieved with UTTO's Locate Assurance on the scene. If you're hiring a company to locate for you, wouldn't it be great to actually see the guality of product you're paying for? If you are competing for a locate contract, imagine being able to confidently provide your customer with real insights into what you are delivering and a rock-solid audit trail if needed.







### Sub-Meter Underground Asset Mapping

Upgrade your locate device with integrated cm level **RTK performance** 

It is no secret that utility maps are inaccurate, outdated and only provide an approximation of an asset's true location. This is costly and dangerous. Valuable core intelligence is being lost in the existing locate and mark process and millions of data points a year are not being captured.

A fundamental first step to reinventing this process is the seamless integration of accurate mapping technologies. UTTO RTK delivers and can be retrofitted to your locator device.

### **GNSS Specifications**

Satellite Networks: GPS/GLONASS/Galileo/BeiDou Accuracy\* 2D rms: Autonomous mode 1m RTK mode 15cm (6") Sensitivity: 165dBm Coordinate System: WGS 84 Time to First Fix: Cold start <40s, Warm start <20s RTK Correction: Via UTTO mobile app

(844) 811-UTTO

It's no secret that insurance underwriters have, for the most part, turned a cold shoulder to the industry, which has resulted in nosebleed premiums, or, more frequently, self-insurance strategies. This is solely because there has been no effective way of measuring and quantifying locate behavior or performance. With UTTO's technology, both locate companies and utilities have a new radical option: sharing data so insurance companies can finally be privy to performance metrics, so premiums can be controlled.

### Don't leave it to chance. Leave it to UTTO.

The type of operational insight UTTO's Locate Assurance provides is set to become ubiquitous throughout the industry, and you will wonder how you ever managed without it.

Get in touch today for a free demo of our Locate Assurance technology and take the first step towards upskilling your team. To learn more or get in touch, visit www.utto.com.



### · Map as you locate

- RTK 15cm (6") capture accuracy
- · IoT implementation with automatic Wi-Fi upload from locate device to UTTO® Cloud
- · Simple set up with single button capture, no external wires, cables or expensive 3rd party equipment
- . Low power consumption
- Compatible with UTTO Locate Assurance<sup>™</sup> for quality verification of captured points

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