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PROfile

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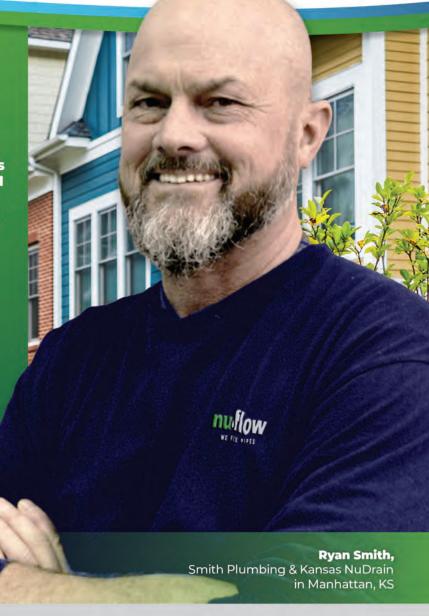
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"The learning process was great. The NuFlow trainer really taught us the ins and outs of the process."

In addition to residential jobs, Ryan and his team have completed several larger projects on commercial size buildings. He has expanded his crew to keep up with the work, half plumbers and half pipe liners, and continues to grow his pipe lining business.

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ON THE COVER // When John Ettore realized his area of Pennsylvania lacked a one-stop-shop service company in the plumbing and drain industry, he set out to fill that niche. In 2019, he founded Delco Storm & Sewer Services with his business partner, David Hochberg, in Drexel Hill, a suburb of Philadelphia. Delco offers a wide range of indemand services for residential and municipal customers across several counties — and honest communication with customers is always at the forefront. The versatility of the cross-trained crew is important and the variety of services offered is a calling card, but ultimately the success of the company comes from it living up to its promises, Ettore says. (Photography by Veracity Studios/Joseph Gidjunis)









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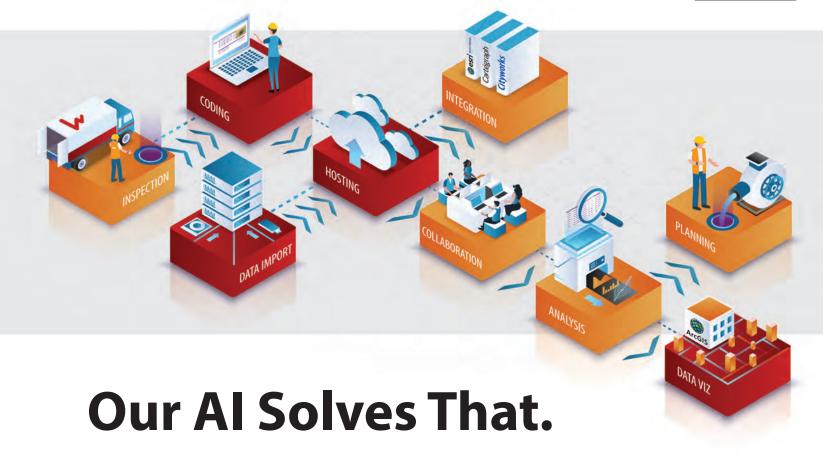
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FROM THE EDITOR

// Kim Peterson

PROTECT YOUR NAME

Never let yourself get too busy to take care of your company's reputation



AST MONTH I talked about delegating things to employees. For some of you that might mean hiring a general manager to oversee things in the field so you can spend more time in the office; for others it's hiring more help in the office to stay in the field. Wherever you're spending most of your time, one thing you shouldn't delegate is control of how incoming calls and reviews are received.

I recently heard from a plumbing company that's basically too busy to answer the phone. Too much work is a good problem to have, but even if you're booked 100% of the time by word-of-mouth, it's a

good idea to find a way to field those incoming calls.

One way is an answering service. Another is the outgoing message in your voicemail. Ask callers to leave a message or text you, and return those messages, even if you have to turn down jobs. Saying you're booked out for weeks makes it clear you're in demand. Never answering the phone makes you look disorganized at best, unprofessional or no longer in business at worst. If you truly have enough work without answering every call, that's great. But if you want to grow or add services down the road, at some point that method will hamper your efforts.

If you do have to turn down work, try to suggest another company if you can. When I called a maintenance company a while ago looking for someone to fix my dryer, the first (highly recommended) guy I called was on his way out of town for vacation and gave me the name of someone else to try. I would call either of those companies again.

Try to pay attention to your online reviews as well. Even if you get plenty of good ones that keep your average up, there are so many different platforms to monitor. Maybe on Yelp you only have 10 reviews and half of them are people saying you never responded to a call for service. Even one or two low ratings will bring your average down on sites where you don't have as many reviews. Customers skim through those quickly and if they see a company with a less-than-stellar rating they will go right on by to someone with a better one.

Personally, as a consumer I like to see companies respond to their reviews on those sites — the good ones and the bad ones. Even if it's a copy-paste message thanking the customer and hoping they call again, a business that is clearly checking those reviews and on the lookout to make good on any mistake is a reassuring thing to see.

Respond to reviews as often as you can, and keep friendly outgoing messages on your voicemail. Make sure your staff is courteous when answering calls. That's simple stuff but it can go a long way, especially when a customer has recently dealt with a service company that wasn't professional.

Keep an eye on how your business is perceived. For a frustrated customer, a helpful voice on the other end of the line is something they'll remember, even if you have to send them to someone else.

I hope you enjoy this month's issue. c



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Tools & Tiaras Educates Girls **About Trades Careers**

Judaline Cassidy, a New York City plumber, is working hard to educate young girls about the opportunities available in the trades through a program she founded in 2017 called Tools & Tiaras. Learn more about it in this video of a recent interview Cassidy did with PIX11 News. >> cleaner.com/featured



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"Being too busy can cause you to miss out on opportunities that would otherwise help with the growth of your business."

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SMART BUSINESS

The Benefits of GPS Fleet Tracking

For Steve Fox, owner of Fox Plumbing in San Diego, the GPS fleet tracking technology his company uses is much more than just a way to track service vehicles. From minimizing fuel costs to reducing insurance premiums, Fox Plumbing is an example of how GPS technology can increase profitability and operational efficiencies on many levels.

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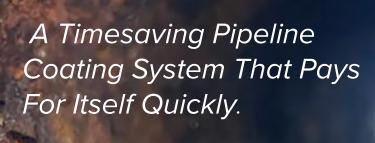
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TRUE TO THEIR WORD

DELIVERING ON EVERY PROMISE IS DELCO STORM & SEWER'S CALLING CARD

// By Giles Lambertson



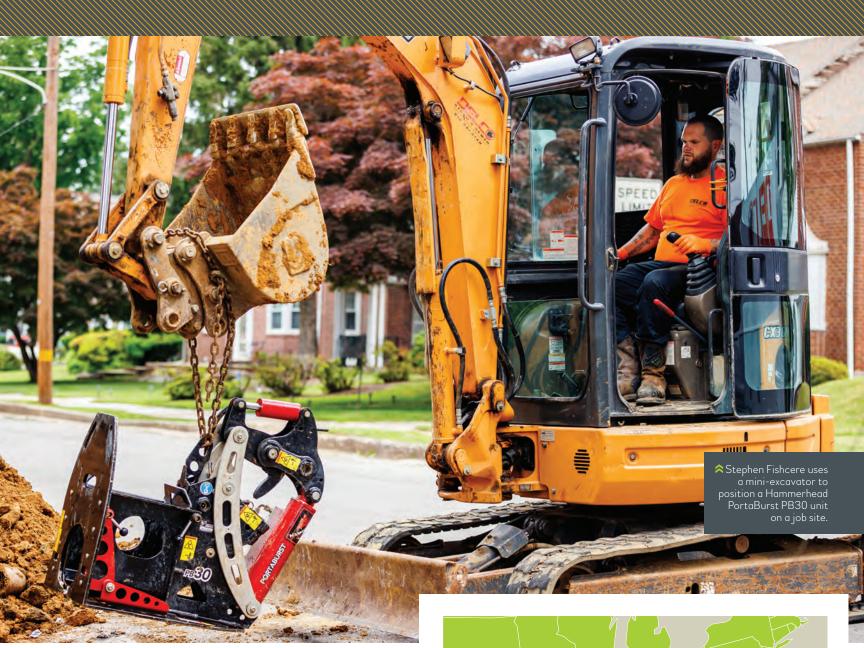
elaware County, Pennsylvania has plumbing companies, and sewer and drain cleaning companies, serving municipal, residential or commercial accounts. What was missing until a year and a half ago was a company that would undertake all of the above.

"There always has been a void here for an all-services company," says John Ettore, founder of Delco Storm & Sewer Services. "I mean, we had the guys who would do just drain cleaning and the plumbers that did just plumbing. Then there were the municipal storm sewer guys. We started the company to combine everything into one business. A one-stop shop."

As owner of a general construction company, Ettore knew something about offering diverse services. His company did site work for new construction projects, plumbing jobs and about anything else related to construction.

After he launched the drain and sewer company, Ettore reached out to longtime best friend David Hochberg to partner with him. Like Ettore, Hochberg had been clearing clogged lines and fixing faucets for about 20 years, having grown up in a family-owned plumbing business. Hochberg's wife Delilah bought in to the deal, too, as office manager.

≪ Business partners John Ettore (left) and David Hochberg created Delco Storm & Sewer Services to be a one-stop shop for plumbing, drain and sewer work for both residential and municipal customers.



"I still have my other company," Ettore says, "but we're phasing it out. We're working here day and night." Turns out an all-services company is a full-time gig.

The company office is in Drexel Hill, a suburb in Delaware County about 8 miles from downtown Philadelphia. The population of Philly's metro area is just under 6 million, but Ettore for now is concentrating on the half-million people in Delaware County as well as two bordering counties — Chester and Montgomery. "I go into Philadelphia County, too, and do some work in the city."

This 50-square-mile service area has evolved since the company opened its doors. Delco started out doing warranty company work in and around Drexel Hill, then began answering calls for help from other clients in more distant municipalities. Now, nearly two years after starting the company, Ettore is racing around three counties in response to customer calls. He has traveled as far as 60 miles for a customer, that one being a response to a storm sewer issue under Amtrak lines.



His path to entrepreneurial success involved hard work and learning as he went. "I dropped out of high school and had no place to go except to work." He labored at several trades to



INTO ONE BUSINESS. A ONE-STOP SHOP."

JOHN ETTORE

polish skills and gain confidence, he says. "Then I started my own thing" — which has become a fast-growing business.

PROVIDING SOLUTIONS

Delco Storm & Sewer Services is primarily engaged in cleaning drains and sewers. Some interior plumbing work is taken on as necessary, mostly rough-in jobs on new construction sites. If there is a staple customer call, says Ettore, it's a request from a real estate agent or property owner for a sewer inspection. That frequently leads to a cleaning or other fix.

Other fixes offered by the young company include trenchless solutions, which is not always the case with a new company. And Delco offers not one solution but two — pipe bursting and pipe lining.

It relies on a HammerHead PB30 when bursting is the answer to a failed pipe. The HammerHead can crack apart laterals from 2 inches to 6 inches in diameter and pull in a replacement pipe using up to 30 tons of pulling force. The tool has a Quick Grip feature that lets it grab the replacement pipe without using any other tools.

If lining rather than bursting a pipe seems the better solution, Delco relies on NuFlow's NuDrain. The cured-in-place system can line

pipe from 1 1/2 inches to 12 inches in diameter. The epoxy liner works on horizontal laterals and vertical stacks, as well as sewer pipe and vents. Delco Storm & Sewer Service is a certified NuFlow contractor.

"The reason we went with NuFlow, besides the quality of their products, is that they are a family-oriented company," Ettore says. "I literally can pick up the phone anytime on any day and someone will be there for us. I don't think you can get that anywhere else."

IN-DEMAND SERVICES

(from left) discuss a job plan.

To date, the company has found demand in their service area for each of the trenchless solutions. The region has a lot of aging clay sewer lines in the ground, he says. "Some of them have 'bellies' in them, so lining can't correct the problem. In those cases, we burst instead." The company's trenchless work is split about 50-50 between the two methods.

Traditional trench digging to fix a pipe is done "rarely." When it is needed, however, a crew member crawls in the company's Case CX36C excavator and starts digging. The 24 hp machine can dig 7 feet deep, which exceeds most sewer and drainline depths. If dirt needs to be moved, the company has a Ford F-750 dump truck for hauling and a Case skid-steer for cleanup.



Conditions for any kind of digging — whether an access pit or a complete trench — vary greatly across the service area, according to Ettore. Loamy soil can be encountered in one place and a mile away the ground turns to sand or clay, shell or rock. The type of pipe in the ground varies greatly, too. "Here in Drexel Hill we are apt to have 5-inch clay pipe and 25 miles away in Montgomery County we'll hit Orangeburg or asbestos pipe."

BOOSTING BRAND AWARENESS

ohn Ettore and David Hochberg are experiencing success as partners in a new company, Delco Storm & Sewer Services. It has come about by "producing quality work," Hochberg says. "If we aren't out there doing that, we won't be getting return calls."

Even more impressive is that those initial calls come without any advertising.

"We have done this with zero marketing," Hochberg says. "We've done it the old-school way. Plumbing companies never used to advertise. They never marketed. They'd just keep their vans clean with a sign on the side. They used to say, 'If you can do it without advertising, you are doing it right."

Delco Storm & Sewer Services evidently is doing something right. Its steady growth in the Philadelphia area over the first 17 months in business has all been from referrals. "And that is incredibly hard to do in today's world when everyone goes to the internet to find service providers. We have done a really good job of keeping everyone happy."

Still, there is nothing wrong with priming the market a little, Hochberg adds. The company has been finding success without advertising, but are going to explore what more they could do with a concentrated effort. To that end, Delco has just signed a contract with the Scorpion marketing firm "to get our brand out there a little more."





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Whatever the type of pipe, the company inspects it with a RIDGID SeeSnake camera. To unclog a pipe, RIDGID FlexShaft cable drain machines are in Delco's toolbox along with Picote and Milwaukee options.

And then there's the company's jetting unit, a Mongoose 184XL. The trailer jetter produces 18 gpm and 4,000 psi and has a 600-gallon water tank connected to a pump powered by a 70 hp engine. "We did our research before we got the Mongoose I think it's the best jetter out there," Ettore says

"WE TRY TO MAKE EVERYONE ON THE TEAM AS VERSATILE AS WE CAN SO IN CASE ONE GUY IS OUT FOR THE DAY, WE'RE NOT WITHOUT THE SKILL OR TALENT TO DO ANY OF THE JOBS."



Ettore, Hochberg and their four-person crew love to use the jetter — Ettore says jetting is their favorite work task. "It's the fastest, easiest and most satisfying cleaning work we do. And we're jetting a few jobs every day."

A VERSATILE CREW

Delco relies on manufacturers to provide training for any new models of equipment. A manufacturer rep either trains everyone together at the shop, or — when the crew is busy — trains Ettore and Hochberg and they in turn share the information with crew members. Because everyone cross-trains to perform all the tasks, everyone has to be up to speed on the tools.

"Everyone must be able to operate the jetter or the camera or whatever," Ettore says.

"We try to make everyone on the team as versatile as we can so in case one guy is out for the day, we're not without the skill or talent to do any of the jobs."

This versatility of the crew is important and the variety of services offered is a calling card, but ultimately the success of the company comes from it living up to its promises, Ettore says. "That's the No. 1



♠ Delco has found demand for pipe lining and bursting because the region has a lot of aging clay sewer lines that need to be replaced.

compliment we receive: that we are honest and clearly communicate what we are going to do before we do it. Our guys are doing a very, very good job of communicating with customers."

Ettore has heard from customers about competing companies that came out to a property for an initial evaluation and then didn't show up again for three weeks. "That's not us."

Honesty is the best company policy, he says, even though sometimes it momentarily hurts the bottom line. He cites a job where a customer had concluded his sewer line was unrepairable and that it would need lining or bursting at a cost of thousands of dollars. "We went in and did the camera work and found there was



"THAT'S THE NUMBER ONE COMPLIMENT WE RECEIVE: THAT WE ARE HONEST AND CLEARLY COMMUNICATE WHAT WE ARE GOING TO DO BEFORE WE DO IT. OUR GUYS ARE DOING A VERY, VERY GOOD JOB OF COMMUNICATING WITH CUSTOMERS."

JOHN ETTORE

>> Damian Pringle uses a RIDGID SeeSnake to inspect a sewer line.

nothing critically wrong with the line and just cleaned it. We want to be honest because that's going to take us further."

Ettore isn't sure what the future holds for Delco, but he and





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Hochberg know that they want to position the company so that it can service more municipal sewer accounts.

"I think we have done a really good job building the company we planned to build," Ettore says. "Things are going even better than I thought they would be at this point. I hope to hire more techs so we can have a lining crew and an excavation crew and so on. Our longterm goal simply is to grow." c

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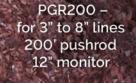
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Please direct them to editor Kim Peterson, editor@cleaner.com.

TESTS OF STRENGTH

Third-party testing is an important part of ensuring quality and proper installation of CIPP liners // By Allison Symonds

HEN A PIPE REHABILITATION crew installs a CIPP liner, they typically do the job in just a few hours, and then move on to the next installation.

But that's not the end of the story. CIPP is designed to last for decades, and the wastewater systems that use it need to be confident in its efficacy. In some cases, installers are required to submit a sample of every liner installed for third-party testing. Only once testing is complete and the results are approved and reported is the job really "done."

Rick Eastwood has operated in the world of CIPP testing for over 30 years. As vice president of business development for HTS, which provides consulting, materials testing and inspection services for both the public and private sectors, he and his team are largely invisible to many rehab professionals. But the work they do is essential to public safety and wastewater management.

Before joining the firm, Eastwood spent almost 20 years before working for various lining contractors. He's seen a lot of change in

the relining industry, from the development of new materials and curing methods to the introduction of more efficient and affordable techniques. But different materials and methods don't change the role played by the tester.

"Materials are designed to meet a standard or a specific design criteria depending on the material and/or application," he explains. "Once it's installed and samples are sent to HTS, we test the material in accordance with the appropriate ASTM method. The results will indicate if the samples meet the desired design criteria."

RELIABLE TESTING METHODS

Testing measures vary depending on materials used in the construction of the liner and the design requirements of the material. Many different parameters go into designing the material and thickness of a CIPP liner, but key factors include depth, water levels and loads. A deeper look into liner design may examine operating pressures and temperatures, potential impact on sensitive environments, pipe

diameter, etc.

"Then there's the strength of the liner itself," Eastwood says. "CIPP liners are designed to last 50 years, known as the design life, and testing can help you confirm this."

The standard way to determine design life is with an ASTM D2990 Flexural Creep test. "In this test, five specimens are placed under a calculated stress load for 10,000 hours — about 13 and a half months," Eastwood explains.

"We record the deflection during this time; then we extrapolate from this data to determine the strength retention of the material at 50 years — typically around 50% or more of the initial strength. This is why job specifications and design programs indicate that the long-term flexural modulus is 50% of the initial short-term value." It's the value contractors input



《HTS Pipe Consultants lab manager Khamla Phouangsavanh records ASTM D2990 flexural creep test deflection measurements of a felt liner sample.



♠ The AST D638 tensile test of a 2-inch-wide fiberglass liner sample in accordance with the City of Los Angeles Greenbook.

➤ The ASTM D790 flexural test of a standard felt liner sample.

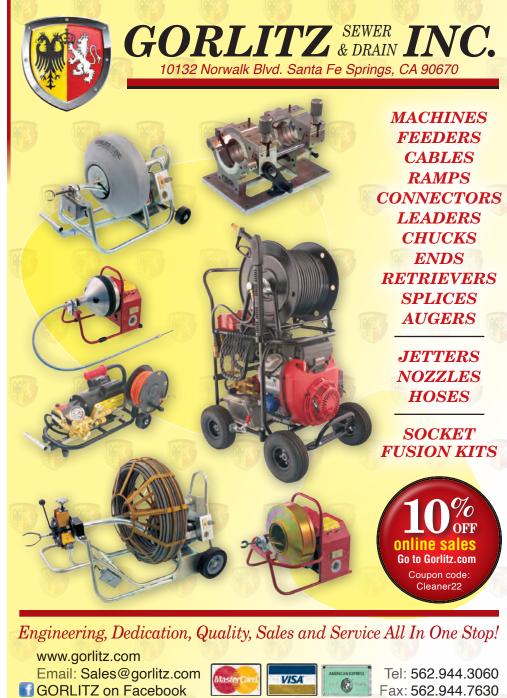


in liner design when calculating liner thickness.

All liner and resin products generally require the D2990 Flexural Creep test performed before they're accepted in the industry; manufacturers typically complete this test long before the product is available for purchase. Depending on the demands of an individual contract or local standards, installers are sometimes also required to have testing performed on their liners. In that case, an operator either takes a sample during installation or manufactures a plate sample that is then cured during the installation process.

"THESE MATERIALS AND PROCESSES ARE TRIED AND TRUE. GENERALLY, POOR SAMPLES WE RECEIVE ARE NOT A FAULT OF THE MATERIAL."

RICK EASTWOOD



PERSPECTIVE

Once the curing is complete, the project manager submits the sample to a testing facility, documenting chain of custody and pertinent job information.

COMMON CIPP TESTS

Samples may also be subjected to a variety of other tests and standards:

- ASTM D790: This test produces the flexural properties of the sample tested. The test is performed in accordance with the requirements listed in ASTM F1216 (for felt liners) or ASTM F2019 (for UV-cured fiberglass liners). It directly ties to ASTM D2990 data for a product. For example, if a liner is designed based on the initial flexural modulus from the ASTM D2990 test, the results of the ASTM D790 test must meet or exceed this value. If this value is not met, installers may face pay deductions or worse. "There is a large difference in the testing methods based on the type of material used in the construction of the liner installed," Eastwood says. "Although the same test is run for felt or UV-cured fiberglass liners, the sample preparation is quite different."



- ASTM D638: For tensile tests like this one, specimens are cut in the shape of a dogbone, put in a grip and pulled apart. The resulting data can help the operator know the tensile strength of the liner. This is generally required for pressure pipe applications.
- Sample thickness: Liners must meet the thickness indicated in the design. For felt liners, the tester can take simple measurements of the full thickness (ASTM D2122) or measure the full thickness and deduct the coating thickness (ASTM D5813), since coating is a nonstructural component of the liner. We have customers requesting all of these depending on the job specifications. UV-cured fiberglass liners must be measured as per ASTM D3567, in accordance with ASTM F2019, which differs significantly from ASTM F1216. ASTM F2019 requires a total of 30 measurements (six measurements per test specimen) to determine the "full thickness," and then places each of the specimens under a microscope to measure the nonstructural layers (films, coatings and neat resin), in the same previously measured six locations, and deduct this measurement from the total wall thickness to determine the "composite thickness."
- Chemical tests: Various chemical tests can be performed according to ASTM standards, depending on an individual project's requirements.

HOW DO LINERS FAIL?

Nearly all the CIPP liners that complete testing pass. But not every sample gets that far. "We don't get many, but we get some occasionally. If I can bend it in my hand, I know it's not going to pass," Eastwood says.

Over the years, he's found a pattern in flawed samples. "After you review the failure, which I like to call 'CIPP: SVU,' you will find some issues that will have a negative effect on the installed liner. These materials and processes are tried and true. Generally, poor samples we receive are not a fault of the material.

"There is a saying that any product, no matter how good it is, is only as good as how the installation goes that day. During an installation, a number of things can go wrong," he says. "You lose head pressure, lose your heater, lose a thermocouple, etc. It can be painful but can also be a learning experience. You just hope those instances don't cost too much."

That's why testing exists, after all. **c**

ABOUT THE AUTHOR

Allison Symonds is senior marketing communications manager for Envirosight.



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Joan Koehne

SET UP FOR SUCCESS

Consulting with the Big 4 is the wisest course when getting your new business off the ground // By Joan Koehne

OT A BIG IDEA for a new business? Well then, you need the Big 4: an accountant, insurance agent, attorney and banker. A successful business launch involves many details that require professional expertise. The Big 4 enables entrepreneurs to turn their business ideas into reality.

Before opening their doors, new companies need to lay a foundation for operations, which includes the legal documents to establish a business identity, organizational structure and taxation.

"Anytime we're creating a business entity, we're always thinking through how an entity is going to be formed and also the tax designation you want," says attorney Jim Ledvina, of the law firm of Conway, Olejniczak & Jerry, S.C.

The structure of an organization depends on its activity, number of owners and their goals.

"There are lots of ways to structure the entity, depending upon what folks are trying to accomplish," Ledvina says.

"IT'S NOT ONE SIZE FITS ALL. ... YOU WANT TO MAKE SURE YOU'RE COVERING ALL THE BASES WITH DOCUMENTS THAT WORK APPROPRIATELY FOR THE BUSINESS."

JIM LEDVINA

PROPER CLASSIFICATION

New businesses typically fall into two categories, a limited liability company or domestic corporation. For Ledvina's clients, LLCs are the most popular business classification by far.

"The reason is that LLC is significantly more flexible in terms of the management and control. The administrative requirements are not nearly as demanding as a corporation," he says. Corporations are required to appoint officers and hold annual shareholder meetings and annual board of director meetings.

"That's all very rigid in corporate law, versus an LLC, in which you can create any type of management structure you want," he says.

The second aspect to consider when launching a business is its tax classification. An LLC with a single owner falls under the disregarded entity status. Basically, the LLC is not taxed as a separate entity by the Internal Revenue Service, so the business owner doesn't file a separate business tax return. All income and expenses flow to Schedule C of the owner's 1040 form.

"It's all very simple," Ledvina says, and he means it. An LLC with a single owner is one of the simplest business structures that exist. When a business has two or more owners, it defaults to partnership tax status. However, the members of the LLC can elect to have their LLC treated as an S corporation or C corporation for tax purposes.

An S corp has a "flow-through" tax designation. Thus, the business entity files an informational return, and income and loss "flow through" to a business owner's 1040 via a K-1 IRS form. The percentage of ownership determines the share of the income or loss attributed to each owner. For an S corp, business owners pay tax at the individual level and not the entity level.

From a tax standpoint, it's rare to have a C corp because of what's known as the "double tax." With a C corp, the entity pays tax. However, if the owners want to make distributions as a dividend, the owners would be taxed on the dividend. Although tax legislation enacted in 2017 addressed the double tax, Ledvina says there's still more benefits being an S corp than C corp.

S corp owners can avoid some payroll taxes when making distributions. In addition, S corps offer other tax benefits, depending on the activities of the entity. It's wise to consult an attorney and an accountant for advice.

DRAFTING DOCUMENTATION

Both LLCs and corporations require a set of legal documents before the businesses open. A corporation files Articles of Incorporation, whereas an LLC files Articles of Organization. A corporation drafts bylaws and a shareholder agreement, while an LLC drafts an operating agreement.

While the articles and bylaws are fairly standard and straightforward, the shareholder agreements and operating agreements differ significantly based on the entity. These agreements cover the management and control of the business. For example, an operating agreement outlines how decisions are made, who's in control, who represents the business, and how an owner can sell his or her ownership interest in the entity.

"It's not one size fits all. You might have silent partners, active partners or individuals who want to be bought out," Ledvina says. "You want to make sure you're covering all the bases with documents that work appropriately for the business."

Another legal document needed to open a business is an Employer Identification Number. Entrepreneurs will hit a roadblock at the bank if they don't have an EIN. Banks require a business to obtain an EIN before opening a business banking account. Anyone can apply for an EIN at the IRS website at no cost. Obtaining an EIN is probably the simplest part of opening a new business.

In addition to filing for an EIN online, entrepreneurs can find sample legal documents on the internet. Entrepreneurs can do their own paperwork, but Ledvina advises against this, based on his experience. In one instance, a client brought Ledvina an operating agreement with language associated with real estate when the entity didn't own any real estate.

"The language associated with valuing the real estate entity is going to be totally different than an operating entity," he says. "There's a big difference in how we draft the two." Because opening a business involves complex legal details, an attorney plays an important role. Ledvina recommends working with an attorney who specializes in business law.

"You want somebody with a little bit of experience. They know what to look out for, and they know the issues and where the

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pain points may be," he says. "If you have something complex, like multiple owners or unique situations, you might want to interview a couple of attorneys. Ask them about their experience and about the pros and cons of different types of entities."

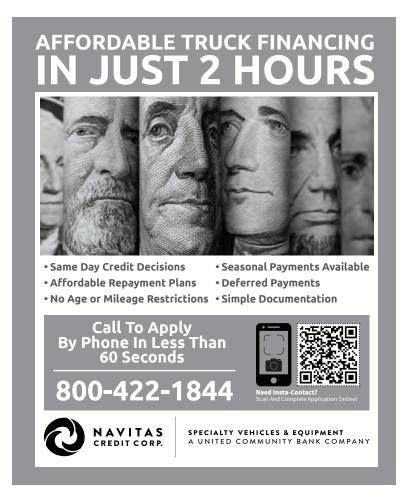
FINANCES AND ACCOUNTING

Once you select your legal adviser, he or she will be able to recommend other members of the Big 4.

A local financial institution can provide a startup loan and a line of credit to support ongoing operations. Banks also provide financial services needed to pay employees, pay bills, receive payments, etc. A local insurance agent helps business owners mitigate risk with commercial general liability insurance and worker's comp insurance. An accountant can set up sales tax, use tax and employee tax withholding. Plus, accountants file taxes and ensure their clients comply with tax laws.

"If you make a mistake, especially on sales tax or payroll taxes, that's almost always a deathblow to an entity because the penalties and interest associated with those taxes are incredibly onerous," Ledvina says.

Opening a business is a complex process, especially when it comes to paperwork. Consulting with an attorney, accountant, insurance agent and banker can help you determine the best trajectory for your new business. These professionals' knowledge about tax implications and the federal and state requirements for startups is invaluable for a new business. A Big 4 will help you set up your business to succeed. c













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Allan J. Coleman Co. 5725 N Ravenswood Ave., Chicago, IL 60660 773-728-2400 ● (f) 773-728-2499 www.allanjcoleman.com shane@allanjcoleman.com See ads on pages 12, 74	RIDGID, Insight Vision, VuTek, General Wire, Electric Eel, UEMSI, Spartan	1" to 12"	30' to 325'	Flash Drive/USB Thumb Drive, DVR, DVD, SD Card		V	V	V		E lectronic
Apex CIPP Solutions 312 E Venice Ave., Ste. 119, Venice, FL 34285 855-997-0524 www.ApexCIPP.com • info@apexcipp.com	Camtronics Miniflex, Apex House Inspections Cameras	1.26" to 12"	60+' to 200+'	HDD, Flash Drive/USB Thumb Drive, Wi-Fi, SD Card, Compact Flash, DVR	·					
Aries Industries 500 Elizabeth St. Waukesha, WI 53186 800-234-7205 • 262-278-1359 www.ariesindustries.com sales@ariesindustries.com See ad on page 17	Aries Industries	6" and up	1' to 1000'	Flash Drive/USB Thumb Drive, SD Card, CD, DVD	V		~		V	
Central Oklahoma Winnelson 5037 NW 10th St., Oklahoma City, OK 73127 888-947-8761 • 405-947-8761 • (f) 405-947-8 www.centralwinnelson.com krjones@winnelson.com See ad on page 51		3/4" to 12"	3' to 325'	Flash Drive/USB Thumb Drive, Wi-Fi, SD Card, DVD, Bluetooth	V	V	V	V		V
CPI Products / Cavallero Plastics 1250 North St., Pittsfield, MA 01201 413-443-0925 • (f) 413-443-9586 www.cplasproducts.com • mtucker@cplas.com See ad on page 55	Roller Skids for All Brands of Push Cameras	3" to 18"					~	V	V	
Cua Claws 2376 Maize Rd., Twentynine Palms, CA 92277 714-697-8697 www.cuaclaws.com • jerry@cuaclaws.com See ad on page 68	Cua Claws							V		
CUES, Inc. 3600 Rio Vista Ave., Orlando, FL 32805 800-327-7791 • (f) 407-425-1569 www.cuesinc.com • salesinfo@cuesinc.com See ad on page 27	CUES	2" to 200"	100' to 2000'	HDD, Flash Drive/USB Thumb Drive, Wi-Fi, SD Card, Compact Flash, DVR, CD, DVD, Cloud	V	V	V	V	V	Pipe/Leak/ Valve/Sewer
DCD 1703 Toll Gate Dr., Mawmee, OH 43537 800-421-4580 www.draincables.com • kwichman@sscorp.com See ad on page 9	RIDGID	3/4" to 12"	30' to 325'	Flash Drive/USB Thumb Drive, SD Card, DVR, DVD, Digital Laptop Interface		V	V	V		V

	DEALER OF	PIPE DIAMETER	REEL SIZES	RECORDING METHODS	SOFTWARE AVAILABLE	REPAIR Facility		ACCESSORIES	INSPECTION VEHICLES	LOCATION Equip.
Duracable Manufacturing 300 Ashworth Rd., West Des Moines, IA 50265 800-247-4081 www.duracable.com • sales@duracable.com See ad on page 23	RIDGID, Milwaukee Tool, Drain Gear, Picote Solutions	Any	Any	HDD, Flash Drive/USB Thumb Drive, Wi-Fi, SD Card, Compact Flash		~	V			
Dynamic Repair 40 Arnot St., Unit 20, Lodi, NJ 07644 973-478-0893 • (f) 973-478-0895 www.dynamicrepairs.biz dynamiccablerepairs@yahoo.com See ad on page 68	GWS, RIDGID, Vision Technology, Insight Vision, Pearpoint, Gator Cam					V				V
Electric Eel Mfg. 501 W Leffel Ln., Springfield, OH 45501 800-833-1212 • 937-602-1761 www.electriceel.com msperanza@electriceel.com See ad on page 63	Electric Eel Mfg.	1" to 12"	200', 300', 400'	Flash Drive/ USB Thumb Drive, Wi-Fi						Pipe/Leak, Valve/Sewer
Envirosight 111 Canfield Ave., Unit B3, Randolph, NJ 07869 866-936-8476 • 973-252-6700 • (f) 973-252-11 www.envirosight.com • office@envirosight.com See ad on page 5	ROVVER X, Jetscan, Verisight, CleverScan, Quickview 76	2" to 120"	100' to 1640'	HDD, Flash Drive/USB Thumb Drive, Wi-Fi, SD Card, Compact Flash, DVR, CD, DVD, Cloud	V	V	V	V	V	V
EPL Solutions, Inc. 1330 W Collins Ave., Orange, CA 92867 714-453-9760 www.epls-usa.com • sales@epls-usa.com	Gvision, Camtronics MiniFlex, SXR Precision Locator, Superior Smoke, Goldak, Rycom, SS20X, SS30X	1" to 12"	67' to 400'	HDD, Flash Drive/USB Thumb Drive, Wi-Fi, SD Card, DVR		~	V			Electronic Smoke/Dye Pipe/Leak/ Valve/Sewer
Forbest Products Co. 44130 Old Warm Springs Blvd., Fremont, CA 94538 877-369-1199 www.forbestusa.com • sales@forbestcanada.co See ad on page 71	Forbest Products Co.	1" to 10"	65' to 400'	Flash Drive/USB Thumb Drive, SD Card, DVR		~	V	V	V	Pipe/Leak/ Valve/Sewer
General Pipe Cleaners/ General Wire Spring 1101 Thompson Ave., McKees Rocks, PA 15136 800-245-6200 • 412-771-6300 www.drainbrain.com • info@drainbrain.com See ad on page 2	Gen-Eye	1-1/2" to 10"	100', 200', 300',400'	Flash Drive/USB Thumb Drive, Wi-Fi, SD Card	V	~	V	V		V
Hathorn Inspection Cameras 255 Shields Ct., Unit C, Markham, ON L3R 8V2 866-428-4676 • 905-604-7040 • (F) 905-604 www.hathorncorp.com • sales@hathorncorp.co	-3400	1-1/2" to 12"	100' to 500'	Flash Drive/USB Thumb Drive, Wi-Fi		V		V		Pipe/Leak/ Valve/Sewer
ITC INSTRUMENT TECHNOLOGY CORPORATION Instrument Technology Corp PO Box 1944, Sebastopol, CA 95473 800-519-1998 sales@instecorp.com See ad on page 68	Vivax-Metrotech	1" to 6" & 2" to 8"	17" & 24"	Flash Drive/USB Thumb Drive, Wi-Fi, SD Card		V	V	V		Electronic Pipe/Leak/ Valve/Sewer

	DEALER OF	PIPE Diameter	REEL Sizes	RECORDING Methods	SOFTWARE AVAILABLE	REPAIR FACILITY	REPAIR PARTS	ACCESSORIES	INSPECTION VEHICLES	LOCATION Equip.
ITpipes 10412 Menaul Blvd., Albuquerque, NM 87107 877-ITPIPES www.itpipes.com • markg@ittpipes.com	ITpipes Mobile, ITpipes Web, ITpipes Cloud, ITpipes Sync	All	All	HDD	~					
KEG Technologies, Inc. 6220 N Pinnacle Dr., Spartanburg, SC 29303 866-595-0515 • 864-804-6637 www.kegtechnologies.net • sales@kegtechnologies See ad on page 22	KEG Technologies	6" to 32"		HDD, DVR	~			V		
Leak Pro PO Box 1345, Morongo Valley, CA 92256 760-832-5325 www.leak-pro.com See ad on page 8	The Leak Pro									Pipe/Leak/ Valve/Sewer
Minicam / VIR 12600 Newburgh Rd., Livonia, MI 48150 734-744-5557 www.minicam.us • marketing@minicam.co.uk See ad on page 33	Proteus	4" to 87"	800' to 1600'	HDD, Flash Drive/USB Thumb Drive, Wi-Fi, SD Card, Compact Flash	~	V			V	Electronic
MyTana MyTana 746 Selby Ave., St. Paul, MN 55104 800-328-8170 • 651-222-1738 www.mytana.com • mytana@mytana.com See ad on page 21	МуТапа	1-1/2" to 12"	50' to 400'	HDD, Flash Drive/USB Thumb Drive, Wi-Fi		V		V		Pipe/Leak/ Valve/Sewer
PEARPOINT® Pearpoint Inc. 39-740 Garand Ln., Unit B, Palm Desert, CA 92211 800-688-8094 • 760-343-7350 • (f) 760-343-735 www.pearpoint.com/en-us • pearpoint.sales.us@sp See ad on page 61		2" to 60"	100' to 1000'	HDD, Flash Drive/USB Thumb Drive, Wi-Fi	~	V	V		V	
RapidView IBAK North America 1828 W Olson Rd., Rochester, IN 46975 800-656-4225 • 574-224-5425 • (f) 574-223-276 www.rapidview.com • sales@rapidview.com	RapidView IBAK North America	2" to 300"	50' to 2000'	HDD, Flash Drive/USB Thumb Drive, Wi-Fi, SD Card, Compact Flash, DVR, CD, DVD		~	V	V	V	V
Video Pipeline Inspection Systems Ratech Electronics 260-7 Spinnaker Way, Concord, ON L4K 4P9 CANA 800-461-9200 • 905-660-7072 • (f) 905-660-151: www.ratech-electronics.com • sales@ratech-electro See ad on page 28	9	1-1/2" to 48"	50' to 1000'	HDD, Flash Drive/USB Thumb Drive, SD Card, Compact Flash, DVR, CD, DVD, Wireless	V	V	~	V	V	V
SECON 6000 S Eastern Ave., Ste, 2C, Las Vegas, NV 89119 702-527-5100 www.seconnv.com • sewerequipmentcompanyofnv See ad on page 55		1-1/2" to 10"	20" to 4'	Wi-Fi, SD Card		~	V	V		Pipe/Leak/ Valve/Sewer

	DEALER OF	PIPE Diameter	REEL SIZES	RECORDING METHODS	SOFTWARE AVAILABLE			ACCESSORIES	INSPECTION VEHICLES	LOCATION Equip.
Southland Tool Mfg. Inc. 1430 N Hundley St., Anaheim, CA 92806 714-632-8198 • (f) 714-632-8228 www.southlandtool.com sales@southlandtool.com	ST-PRO CAM	6" to 8" (available to 18")	Any Size	SD Card, APP Readable						✓
SPARTAN FOR TOUGH CUSTOMERS. Spartan Tool 11618 Terminal Rd., Niles, MI 49120 800-435-3866 www.SpartanTool.com • Sales@SpartanTool.com See ad on page 76	Spartan Tool	1" to 8"	130' to 400'	HDD, Flash Drive/USB Thumb Drive, SD Card, WinCan, iCloud		~	~	V		V
T&T Tools, Inc. P0 Box 531, Spring Lake, MI 49456 800-521-6893 • (f) 800-521-3260 www.mightyprobe.com • sales@mightyprope.co See ads on pages 53, 68	m									~
The Cable Center, Inc. 8318 Olive Blvd., St. Louis, M0 63132 800-257-7209 • 314-993-3099 (f) 314-432-8024 www.thecablecenterinc.com thecablecenterinc@gmail.com See ads on pages 43, 69	General Wire Spring, RIDGID®	3/4" to 12"	65' to 400'	Flash Drive/USB Thumb Drive, Wi-Fi, SD Card, DVD		V	V	V		~
TruGrit Traction Inc. PO Box 2084, Winter Park, FL 32790 407-900-1091 www.TruGritTraction.com info@trugrittraction.com See ad on page 68	TruGrit	6" - 48"		HDD, Flash Drive/USB Thumb Drive, Wi-Fi, SD Card Compact Flash, DVR, CD, DVI			V	V	V	
VIVAX METROTECH Vivax-Metrotech Corp 3251 Olcott St., Santa Clara, CA 95054 800-446-3392 • 408-734-1400 www.vivax-metrotech.com • salesUSA@vxmt.cc See ad on page 53	vCam-6, vCamMX, vCam-Drain om	1 1/2" to 12"	100' to 400'	HDD, Flash Drive/USB Thumb Drive, Wi-Fi, SD Card, Direct to App	V	V	V			Electronic Pipe/Leak/ Valve/Sewer
Western Drain 1140 N Kraemer Pl., Anaheim, CA 92806 714-632-0447 www.westerndrain.com saleswd@westerndrain.com See ad on page 55	RIDGID, Milwaukee Tool, Drain Gear, Picote Solutions	Any	Any	HDD, Flash Drive/USB Thumb Drive, Wi-Fi, SD Card, Compact Flash		V	V	V		Electronic Pipe/Leak/ Valve/Sewer
WinCan WinCan 300 Cedar Ridge Dr., Pittsburgh, PA 15205 877-626-8386 www.wincan.com • sales.us@wincan.com See ad on page 7					V					

GOODINSTINCTS

JEROME STEPHENS OPENED A LUCRATIVE NEW MARKET BY EMBRACING PIPE BURSTING TECHNOLOGY // By Ken Wysocky w.AAcusite.co

ZIGGING WHILE OTHERS ZAG CAN BE A RISKY BUT FRUITFUL BUSINESS PHILOSOPHY.

Consider Jerome Stephens, for example, who decided about 18 years ago to take his company, then called A&A Plumbing, in a different direction by embracing relatively new technology at the time: pipe bursting.

It was a go-big-or-go-home moment for Stephens and his Baltimore-based company, now known as A&A Construction and Utilities. But the gamble paid off, as indicated by the company's new name, which Stephens changed in 2011 to better reflect the company's new capabilities.

Stephens' success story demonstrates the importance of being an early adopter of advanced technologies that can open up new markets, as well as differentiate from competitors and create barriers to market entry.

"I was trying to separate myself from the masses of plumbers," Stephens says. "I also believed at that time that people would want pipes replaced without a big open trench.

"Pipe bursting technology definitely was a game-changer."

A&A relies on pipe bursting and directional boring machines built by Pow-R Mole Trenchless Solutions.



"I was going to buy a horizontal directional drilling machine," Stephens says. "But as I did research, someone told me about Pow-R Mole. The owner, Brian Kelly, told me his machines were smaller and could do pipe bursting along with directional boring for installing new water services, as well as install sewers lines on grade, once I got good enough.

"It opened my eyes to boring and pipe bursting."



« The crew at A&A Construction and Utilities in Baltimore includes (from left) Bruni, Raul, Miguel, Kenneth, Fidel, owner Jerome Stephens, Angel, Abel, Ever and Elliot – "we're a firstname company, Stephens says.

>> Ever (in excavator) and Raul expose a section of a water service line on a pipe bursting job.

CONVERTING PIPE BURSTING SKEPTIGS

erome Stephens tackled a big challenge nearly 20 years ago when he steered his company, A&A Plumbing in Baltimore, away from plumbing and into a new market: replacing failing water and sewer lines by using pipe bursting and directional drilling technology.

It wasn't an easy transition. The equipment, made by Pow-R Mole Trenchless Solutions, represented a significant investment for a young entrepreneur with few resources, and the learning curve was steep. Furthermore, Stephens also had to contend with officials in local municipalities who weren't convinced the technologies, which were relatively new at the time, would work well enough to allow them.

"The next battle was getting the municipalities on board, convincing them to let us do it," Stephens recalls. "Even today, it's still a battle in some areas."

Oftentimes, convincing officials requires what could be called inthe-field exam. In one instance more than a decade ago, an A&A crew used a Pow-R Mole PD-33 pipe bursting system to replace a failing, 4-inch-diameter residential sewer line under the watchful gaze of some skeptical county officials.

Stephens was also required to offer the customer a five-year guaranty, plus allow county engineers and a chief plumbing inspector to observe the job, Stephens says.

A&A and Pow-R Mole aced the test, which was unusually challenging and complicated. The failing sewer line ran under a driveway from a road to a garage, a distance of about 80 or 90 feet. About halfway into the garage, the line took a 45-degree turn into the home, under a foyer. From there it took another 45-degree turn and eventually terminated in a half-basement in the back of the house, Stephens explains.

Pipe bursting was a great alternative for the customer because using conventional excavation to replace the line would have required breaking up the driveway, the garage floor and the floor of the foyer.

The job took about a day to complete. It required digging three holes: one at the property line by the road, one inside the garage and one in the basement wall.

The first bursting "pull" started inside the basement and ended in the garage; then the crew turned the machine around and performed the second pull from the property line into the garage, where a cleanout was installed.

"It all went very well," Stephens says. "Our success on that job made it possible to use pipe bursting in that county — opened up a whole new market for our company."

A BETTER WAY

The tipping point for Stephens came on a job the company tackled nearly two decades ago.

A crew of A&A employees was trying to install a new 6-inchdiameter PVC sewer line at a restaurant in Baltimore.

"The installation was about 12 feet deep and we worked with live utility lines running above the sewer pipe — and over our heads," he recalls. "We were working in sandy terrain with constant cave-ins.



Raul cuts a section of pipe in the access pit.

"Our crew slept on the job site for two nights. That job helped me make my decision to get into trenchless technology. ... I figured there had to be a better way."

The transition to trenchless technology, however, wasn't simple. Even with training provided by Pow-R Mole, Stephens says it took years before the company was going "full blast" into trenchless line rehab.

"It was scary at times," says Stephens, who established his company in 1993 while he was still an apprentice plumber. (A master plumber he knew represented the company until Stephens became a licensed journeyman plumber.) "You're always a little scared of what you don't know.

"But every chance we had to do a job trenchless instead of open trench, we used the Pow-R Mole equipment. It definitely was difficult because you fail a lot, and then you have to go back and you lose time and money.

"Quitting always was an option, but I wanted to be good at it because I knew there was a good market for it. I was pretty persistent."

GAINING CONFIDENCE

Stephens persevered. "You've got to have faith and confidence not only in yourself, but in the technology," he says. "As we evolved, I knew this was something that would be viable.

"And when everything goes right the first time, the profit

margins are much better than in plumbing. You just have to get enough jobs under your belt."

Today the company works primarily as a subcontractor, replacing water and sewer lines for commercial buildings and residential homes.

"That's our bread and butter," Stephens says.

The company also occasionally installed new water and sewer lines. Commercial jobs generate

about 65% of the company's revenue and residential work contributes the balance.

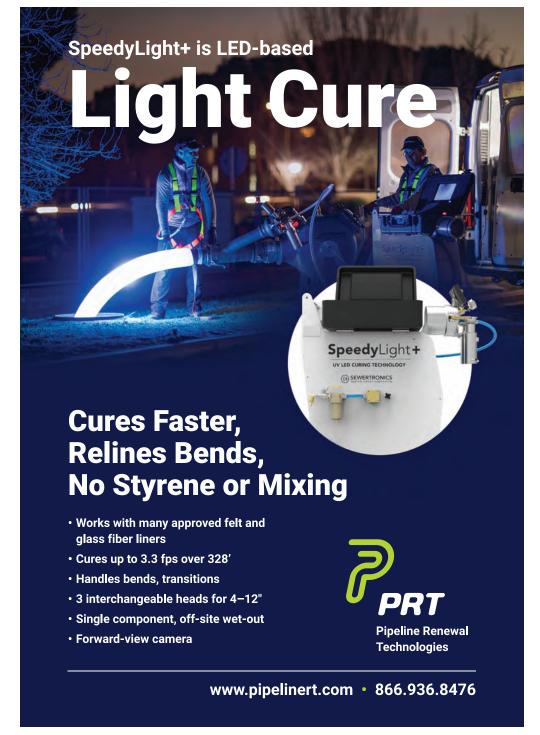
Stephens planned to be a carpenter, not a plumber, when he attended a trade high school on the west side of Baltimore. But the carpentry courses were full, so his guidance counselor suggested he instead take plumbing classes, then switch to carpentry when a spot opened up.

"I WAS TRYING TO SEPARATE MYSELF FROM THE MASSES OF PLUMBERS, I ALSO BELIEVED AT THAT TIME THAT PEOPLE WOULD WANT PIPES REPLACED WITHOUT A BIG OPEN TRENCH."

JEROME STEPHENS



Ever connects hoses on a job site.



"YOU'VE GOT TO HAVE FAITH AND CONFIDENCE NOT ONLY IN YOURSELF. BUT IN THE TECHNOLOGY."

JEROME STEPHENS

That never happened — and he's happy about that twist of fate.

"There's better money in this work than in carpentry," he says.

Stephens then graduated from the University of Maryland, College Park with a degree in plumbing. After that, Stephens earned his journeyman's license and became a master plumber two years later.

In the meantime, he also founded A&A Plumbing when he was 22 years old.

"I just wanted to own my own company," he says.

The young entrepreneur primarily marketed his company by knocking on doors. He also tried radio and television advertising, which proved to be too expensive for the return on investment.



At that point, Stephens made another critical tactical decision: He decided to market his company to larger plumbing companies and piggyback on their already-established client contacts.

"Basically I went after the plumbers who already were doing a lot of advertising," he explains. "They realized it made more sense for us to do the work for them.

"Some of them have some of the same equipment we have, but doing this kind of work can be a headache. And since we do it every day, we have more experience, so they put those jobs on us.

"For us, it's not a headache — it's just another day at the office." Stephens says the idea to essentially work as a subcontractor for large plumbing companies was a gut hunch.

"I don't have formal business training, but I guess I have good instincts," he says. "That's what you need to survive.

"A lot of people out there are much smarter than me and have more resources. I started out without any resources — no money and no guidance. I was young and needed to come up with a solution to every problem on my own.

"But I figured things out."

KEYS TO SUCCESS

Stephens cites three other aspects that were essential to his success: education and experience, consistency and discipline, and personal reflection on the pain and sacrifice required to make things happen.

"You need to become an expert at what you do - educate



Raul sets up pipe bursting equipment to replace a residential water service line.

➤ Raul finishes digging the access pit for a pipe bursting job.



yourself daily and obtain all the experience you can," he points out. "For me, success also comes from consistency and discipline — the ability to do the hard things, day after day after day.

"Then you need to reflect on your pain and sacrifice, because pain plus reflection equals progress."

In addition, Stephens credits his team of employees.

"The A&A team gets complicated jobs done. Everyone is willing to stay on a job until it's done. That's a strong point among our employees — I can always depend on them." C O N T | N U E D >>

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>> Ever (left) and Raul prepare to make connections to the water meter after completing a pipe bursting job.

To attract and retain technicians, Stephens says he relies on a combination of factors, including providing them with good equipment, continuing education such as on-the-job training for safety and using new technology, and offering very competitive pay.

"We basically train them and then overpay them so they stay. I think it works because we don't have a lot of turnover."

WISE INVESTMENTS

One of the most tangible aspects of Stephens' success is the lineup of equipment he's invested in over the years. Eight machines from Pow-R Mole form the backbone of the fleet: five Pow-R Mole directional boring machines (one model PD-2, two PD-4s and two PD-6s) typically used to install pipe on grade, and three pipe bursting systems (one PD-22 and two PD-33s).



"FOR ME, SUCCESS ALSO COMES FROM CONSISTENCY AND DISCIPLINE — THE ABILITY TO DO THE HARD THINGS, DAY AFTER DAY AFTER DAY."

JEROME STEPHENS

Stephens also bought a PV500 trailer-mounted hydroexcavation unit built by Pacific Tek, used to vacuum out test pits during directional-boring projects.

The company also owns a small Model 12 auger machine, made by Bor-It and used for directional boring through difficult soil and rock conditions and rock hammering; three Ford F-450 trucks; and a recently purchased ground-penetrating radar device manufactured by Guideline Geo/MALA.

"The GPR will help us locate pipes or utility lines as well as figure out the depth and location of rock formations," Stephens says.

BRIGHT PROSPECTS

Stephens says he's excited about the company's prospects. Future goals include further development of his employees' skills and adding technologies that will enable the company to provide more services.

"We want to add services and technologies that will allow us to solve even bigger problems and add more value for our clients," he says. "Most of all, we want to team up with more plumbing companies and add value to their services and help them grow as well."

As an example of adding value for clients, Stephens says he plans

to start a concrete division to make pavement repairs required in the wake of boring and bursting jobs. That would make life easier for clients because it's hard for them to find contractors that can do the work in a timely manner.

"If we do concrete work, then our clients don't have to go and look for a concrete guy," he explains. "The more we can do for them, the better. General contractors like one-stop shops."

Stephens says he feels truly blessed as he looks back on his decision nearly 30 years ago to not only start a company at age 22, but to take a gamble on trenchless technology.

"I worked really hard and I believe that if you work hard, you get rewarded. It all pays off eventually. You just have to keep plugging away at it." ${\bf c}$

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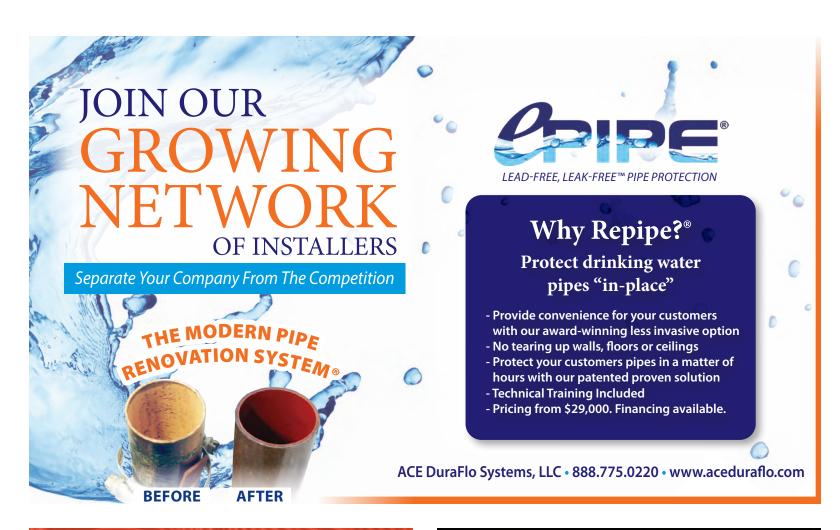
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BUSINESS

KEEP EMPLOYEES ENGAGED

It takes deliberate effort to keep even the best team committed and enthusiastic // By Kate Zabriskie

"They're here, but they're not here. My staff isn't committed, and it's obvious to me and to our customers. We're in trouble."

"To say that initiative is lacking is an understatement. My staff doesn't think beyond the basics. If they hit a wall, they stop. The idea of looking for a window never crosses their minds."

"Maybe it's them. Maybe it's me. Our team just goes through the motions. I wish there were a magic formula to get people focused and motivated."

While there isn't an instant solution for increasing enthusiasm, focus and initiative, there are steps any leader can take to orchestrate success.



Step 1: Communicate the direction

It's hard for people to reach a destination if they don't know what it is. Whether you call it mission, purpose or something else, employees need to have a solid understanding of the organization's why, the team's why, and their why. Leaders who promote engagement regularly connect day-to-day tasks and expectations with the bigger picture.

Work on creating clear lines of sight, and lay out goals and expectations for your team.

Step 2: Delegate responsibility and authority

Once people know the direction, good leaders give them responsibility and the tools they need to execute the plan. Will everything be done exactly as the leader would do it if he or she were to take on the task? Doubtful. However, great leaders know when to step in and when to stand back and let others own their work.

Step 3: Recognize good work and the importance of others

No matter their role or level in an organization, people like to be appreciated and recognized. Whether someone is a vice president or a temporary worker, leaders who engage their teams communicate the idea that everyone has an important role. Take the time to articulate how others contribute. "Eric, you are the first person to have contact with our customers. When people call us for service, you are the person who sets the tone. Thank you for always being professional. You're nailing it."

Step 4: Support stumbles

Slips, trips and mistakes will happen when people try to solve problems, and leaders who engage their teams to the full capacity have the good sense to support the stumbles employees will inevitably encounter. In other words, it's about having the maturity to get beyond blame and focus on what to do differently in the future.

Do you assume the best? Do you steer clear of throwing others under the bus? Do you treat errors as learning opportunities? If not, you've got some room to improve. "Eric, that job did not go as you had hoped, but we can learn from the experience. In hindsight, what could have been done differently?"

Step 5: Instill a sense of calm and certainty

Without a clear course, employees spend a lot of time worrying and focusing on what-ifs that may never happen. But with a sense of certainty, people's shock absorbers function at maximum capacity. A leader with a plan reduces fear, uncertainty and stress.

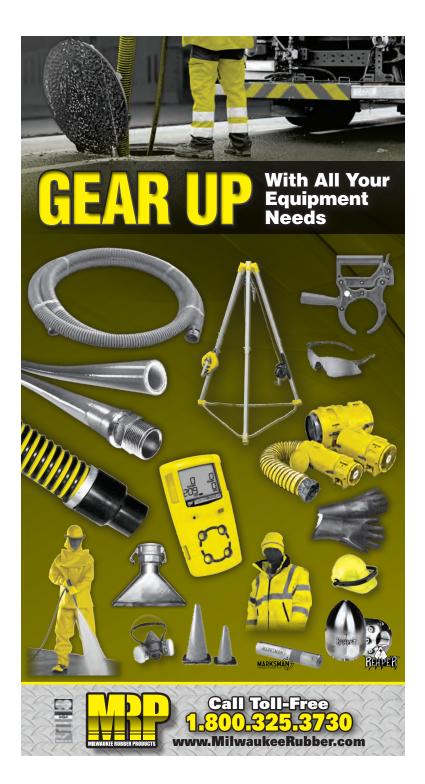
The plan can be short term and it can change, as long as it's there and communicated. Do you do all you should do to keep people in the loop?

Step 6: Promote a level playing field

Fairness trumps favoritism every time, and people will stick with a leader through some horrible circumstances when that person is a straight shooter and doesn't favor some over others. Stay mindful of what's fair, and think about how your team will perceive your actions.

Step 7: Address problems

Engaged teams eschew mediocrity, and the people at the top have high standards for everyone. When problems occur, leaders who engage confront them head on. If you have conversations you've put off, now is the time to reset and communicate what's expected.



Leaders who engage don't do so by accident or without work. If you want to jumpstart or refocus your team, start with these seven steps. With some deliberate effort on your part, you should start seeing results. c

A B O U T THE A U THOR

Kate Zabriskie is the president of Business Training Works, a Maryland-based talent development firm. She and her team provide on-site, virtual and online soft-skills training courses and workshops to clients in the United States and internationally. For more information, visit www.businesstrainingworks.com.



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KEEPING CONTRACTORS EQUIPPED

Success for Jetter Depot means its customers are prepared for any job that comes their way // By Kim Peterson

HE TEAM AT JETTER DEPOT has a singular focus: taking care of their customers. The company prides itself on being a one-stop shop for its drain cleaning and lining customers, providing equipment from many top vendors. Jetter Depot employees follow up each sale with all the training new and veteran contractors alike need to confidently complete even their most challenging jobs. That support is invaluable when trying out new types of equipment in an industry where mistakes can be expensive.

After many years in the industry, Kim Pisaniello joined Jetter Depot in 2011. She was part of the original two-person team alongside founder Gary Allen, hired as the parts sales manager, but also helping with accounts receivable, purchasing and even shipping in order to help get the company off the ground. She now serves as inside sales manager.

Director of operations Andrew Shellack has been with Jetter Depot since 2017. He is a certified Picote trainer and handles much of the CIPP and trenchless side of the company, as well as day-to-day operations.

Matthew Miranda, in trenchless technical support, has been with the company for a shorter time, but his many years of experience in the industry have already made him a valuable resource for customers.

Today Jetter Depot has grown to 15-plus employees and serves customers nationwide. Cleaner spoke with Shellack, Miranda and Pisaniello about why customer support is so important to them, recommendations for buying new equipment, and how the industry has changed.

CLEANER: Tell us a little about the history of Jetter Depot.

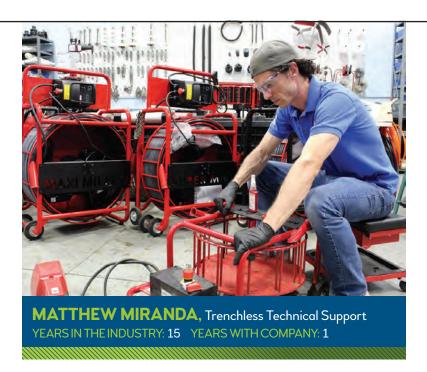
Schellack: We were officially founded by Gary Allen in 2008, offering high-performance and affordable nozzles, hoses and



accessories to the drain cleaning and waterjetting industry. We have really expanded and added many product lines over the years and are proud to be the exclusive North American distributor for Nuova Contec srl, a leading manufacturer of nozzles based in Italy.

CLEANER: What differentiates your company from other retailers/distributors?

Schellack: We pride ourselves on being a one-stop shop. If we don't have what our customers need in stock, we're usually pretty good at sourcing it. The fact that we offer such an array of products, from new and used jetters, camera systems, locators, millers, flexshafts, jetter repair parts, sectional and drum machines, smoke testers and CIPP lining equipment and materials, to many other



product lines, makes it easier for our customers to come in or have us ship out anything they need.

We also are huge believers in training and supporting our customers in order to help them be safe and successful in the field, and emphasize that whenever we sell a new tool or piece of equipment. Over the past few years, we have really expanded into the trenchless market, offering brush coating, spray coating, CIPP lining, and point-repair solutions, and have two certified trainers on staff. We've had customers come from as far away as Hawaii, California, North Dakota, Texas, Massachusetts and Puerto Rico to train with us here.

CLEANER: You offer many different brands and types of equipment. How does your brand partners' equipment work together to provide solutions for your customers?

Schellack: Over the years, and especially in the last decade, we have become strategic partners with some of the best companies in our industry including Nuova Contec, Picote Solutions, Jetters Northwest, RIDGID, Hannay Reels, Arthur Products, Enz USA, Poly-Flow LLC, Piranha Hose Products, Maxliner USA, Forbest USA, General Wire Spring, Hurco Technologies, APEX CIPP Solutions, Dancutter USA, IPP Solutions and many more. Most plumbers and drain cleaners like to deal with one vendor whenever possible and it's very convenient for them. We treat our customers, many of whom we've known for years, as friends and family, and it's those relationships that have really been the backbone of our business. Most of our newer customers come from referrals, which is definitely the catalyst for our growth as a company.

"SUCCESS FOR US IS WHEN A CONTRACTOR WINS BY GROWING HIS BUSINESS IN AN EFFICIENT, SAFE, PURPOSEFUL WAY."

MATTHEW MIRANDA

CLEANER: What are some recommendations for customers shopping for jetting and drain cleaning equipment?

Miranda: To me, the key to making the right recommendations for each customer is first knowing the needs of their company and the scope of their day-to-day work. So this conversation often starts with a few questions: Are they residential or commercial? What type of van are they outfitting for what type of technician? Once I know the clients' goals and what tools they already own, we can begin making recommendations to expand their tools, equipment and, in turn, services offered by the company.

Drain technicians often start out with a couple different sizes of cable machines, cameras and locators, along with their own special gauntlet of hand and power tools. Cable machines traditionally have done the brunt of unclogging drains, and the camera is the follow-up tool that helps you diagnose the problem.

Hydro jetters are a fantastic upgrade to any drain cleaners equipment list. They often have more reach and capability than a traditional cable machine. Just as important as the jetter is fitting it with the right hose, nozzles and safety equipment. Flexshaft machines are another tool that has changed the industry in the last decade, and whichever brand you choose, these machines will surely open up more opportunities in the drain cleaner's business. A smoke machine is another awesome tool that adds more opportunity to the contractors services and helps diagnose sewer leaks when conventional tools aren't working well.

Accessories and safety equipment are the last part of the puzzle, and I personally find this is typically an underserved area in the drain cleaner's tool arsenal. Proper PPE, manhole rollers, nozzle centralizers, etc., all make a significant difference in how efficiently the technician operates and keeps accidents at a minimum.

CLEANER: What after-sale services, training or other help does Jetter Depot offer its customers?

Miranda: Here at Jetter Depot, we take pride in offering the best post-sale services we possibly can. Our team cumulatively has decades of experience in this industry and we are here to first, provide you with quality tools and equipment, and second, provide top-notch technical support you can count on. We offer training for hydrojetting and sewer cameras, and factory certified training for

THE GEAR

Picote drain cleaning, coating and CIPP installations. Here you can learn all the things necessary to become a drain cleaning and lining professional, all in one place. Success for us is when a contractor wins by growing his business in an efficient, safe, purposeful way. You can also rest assured that if and when equipment and tools need service or repair, we've got you covered there too. We offer full service on most brands of jetters, Picote products, and other pieces of drain cleaning equipment.

CLEANER: Matthew, a customer of yours recently told us that you're partly to thank for his success, because of the knowledge and support you've given his company. Why is continuing those relationships with customers so important to you?

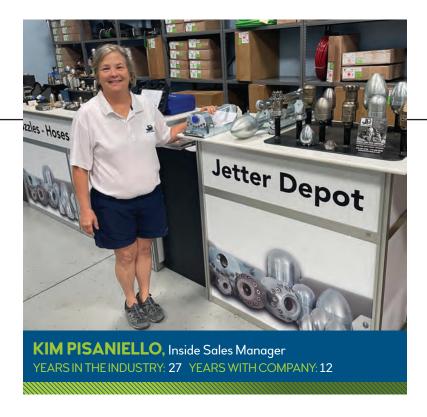
Miranda: The simple answer is that it brings me joy seeing our clients become successful. I feel a win when they win. Closely coupled is a deep gratitude for those who made me who I am today. I draw on my experience growing up in this industry, good and bad, and I feel compelled to pass on what I've learned in a constructive way to benefit the industry.

The industry and job applications change over the years, another reason to bolster our customers with great service. There's going to be that job a year from now that is out of the norm and it's important you know that we are only a call away and can help you find the formula for success. Guys who know me know that I'm all about explaining the "why" behind what we're doing. I'd like to empower technicians with the right knowledge so they are better equipped for hitting a home run when a curveball comes.

CLEANER: Kim, what do you enjoy most about your career in this industry that has kept you so dedicated to helping customers for over 27 years?

Pisaniello: After 27 years in the industry, I know that my niche is in sales and customer service. I was born with a natural instinct to help people and I am definitely a people person. With these two attributes and years of experience, I have developed into the salesperson I am today. I have so much knowledge to share with customers, some of whom I have known for years, and these customers will tell others to contact me. They just say, "Call Kim, she will know," and that is the best feeling when a new customer tells you that someone has recommended them to me.

I could not do my job so well without the support of the strong team that we have built here in the sales, purchasing, shipping and service departments. We all work together to take care of the customer on every level; I call this "360-degree customer service" from start to finish.



CLEANER: How has the high-pressure jetting nozzle technology evolved over the years and what direction do you see it going in the future?

Pisaniello: When I first started in the industry, most nozzles that were available only had drilled orifices. There were no specialty nozzles, no tier 2 or tier 3 nozzles; there were mechanical root cutters, but no controlled rotation, spinning or chain flail style nozzles. Every year the nozzle manufacturers continue to come out with something new, something better, using flow-dynamics and steel or ceramic inserts for high performance and maximum cleaning results. Even with the increased use of the latest high-speed drain cleaning technology from Picote and other flex-shaft manufacturers, there will always be the need for nozzles to flush the material out of the line that was cleaned or descaled, so I foresee nozzles still being a major factor in the industry for years to come.

CLEANER: What's new for Jetter Depot in the next year? What can customers expect out of Jetter Depot in the future?

Schellack: We are currently looking to purchase a larger facility where we plan on having a state-of-the-art training facility, a larger full showroom, more service bays and an even larger rental fleet of jetters, cameras and drain cleaning equipment.

CLEANER: What do you want customers to think of when they hear the name Jetter Depot?

Pisaniello: When people think of Jetter Depot, I hope they think of great people with great customer service and support. c

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MONEY

NEW DEPTHS

Submersible cameras can inspect and clean tanks and towers — no water drainage required // By Ken Wysocky

BOUT FOUR YEARS AGO, the operator of a cogeneration plant in a medical center in Houston wanted to inspect the epoxy paint inside a massive 9 million-gallon, chilled-water storage tank. Only one problem: The logistics of moving the required equipment to the top of the tower, coupled with using a scuba diver at that depth, posed cost and liability concerns.

But OLC Services, which inspects and cleans tanks and vessels — primarily HVAC cooling towers at commercial buildings and similar systems at industrial plants — provided a solution: a DTG2 submersible inspection camera made by Deep Trekker. (The DTG2 has since been replaced with a next-generation version called the DTG3).

"We went in with a control tether line and took the camera straight down to the bottom of the tank," says Shelby Howell, vice president of operations and engineering at OLC, a division of Houston-based SWS of Texas Inc.

"THESE MACHINES PROVIDE US WITH A VERY EFFICIENT PROCESS THAT GREATLY SIMPLIFIED THE LOGISTICS OF INSPECTING A TANK FILLED WITH WATER."

SHELBY HOWELL

"Then we guided it along the bottom and used a sample grabber to collect some of the sediment at the bottom, then came right up. The whole operation took only about an hour. This unit is one of the most remarkable and versatile remote-operated vehicles I've ever run across."

That particular job didn't require draining the cooling tank, which underscores why OLC (which stands for "online cleaning") owns three Deep Trekker cameras. Two are three-wheel crawler



↑ The Deep Trekker submersible drone camera, shown here in a water tower, can fly" through water via remote-controlled thrusters and dive as deep as 500 feet.

cameras: a DT640 with rubber wheels and a DT640 with magnetic wheels that enable it to climb metal walls in tanks, ships and the like. The third is the aforementioned DTG2, which can "fly" through water via remote-controlled thrusters and dive as deep as 500 feet, he says.

"It's the most innovative underwater-inspection vehicle I've ever seen," he says.

NO CONFINED-SPACE ENTRY

Established in 2015, OLC — which primarily serves customers in Texas — has invested nearly \$55,000 in the three machines. The battery-powered machines allow the company to serve a variety of customers.

As an example, Howell cites fire water tanks commonly found in plants and commercial businesses. The tanks require periodic inspections to determine if there's corrosion, too much sediment buildup and so forth. C O N T | N U E D >>



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PROBES...

- > Insulated, standard, and specialty soil probes
- > Metal shaft sizes: 3/8" round, 3/8" hex, or 7/16" hex
- > Replaceable tips are threaded on and hardened
- > A "slide" allows the handle to pound the shaft into the ground

MACHINES



The Deep Trekker cameras offer two competitive advantages: They virtually eliminate the need for confined-space entry, and they can perform inspections without draining water from tanks or vessels and refilling them — two time-consuming and expensive processes, he notes.

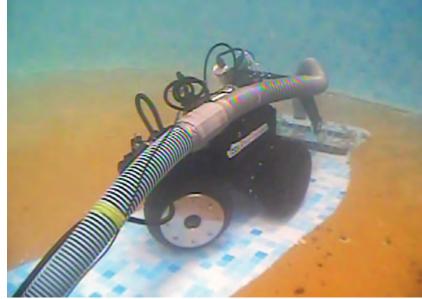
"We can do an inspection in 30 to 40 minutes, which is much faster than if a tank had to be drained. Draining a large cooling tank could take four to eight hours and a small one might take two to three hours — and then there's refilling time, too."

Another advantage: No need for confined-space entry by divers. "These machines provide us with a very efficient process that greatly simplified the logistics of inspecting a tank filled with water," Howell adds. "It's very economical to drop these cameras into tanks and it doesn't disrupt the owner's operations, either. That's huge because most of them can't shut down without causing major financial issues."

CONSERVING WATER

In addition, eliminating the need to drain tanks saves water no small issue in an area where water is a scarce resource and costs anywhere from \$10 to \$13 per 1,000 gallons.

"We don't want to waste a valuable resource," Howell says. "And we don't want to tie up their personnel, and they don't run the risks associated with confined-space entry."



↑ The DT640 crawler camera/cleaner at work in a tank. OLC Services owns two DT640 models, one with rubber wheels and one with magnetic wheels that enable it to climb metal walls in tanks, ships and the like.

Furthermore, the machines help OLC generate business by making tank inspections faster and easier — and less risky.

"The costs of these camera inspections are relatively low, which makes our service competitive and attractive to customers," he says. "So they help us make more money."

The cameras are very versatile, too. The DTG2 also can retrieve small items with an optional, pincer-style "grabber-arm." And along with performing inspections, the DT640 — which can operate at depths down to 164 feet — comes with a dual-intake vacuum-head kit that sucks up debris from tanks via a hose and a vacuum pump, Howell explains.

VERSATILE MONEYMAKERS

As an example of the machines' versatility, Howell points to water-towers inspections, which often reveal debris that must be removed to meet potable water standards. An OLC employee can carry the lightweight DT640 in a backpack up to the top of a tower, lower it into the tower for an inspection and then guide it as it sucks up tank sediment and other debris, he explains.

The machine also can be equipped with optional attachments that perform functions like pressure washing, bulldozing and more.

"We've even used the DT640 to inspect the exteriors of ships and barges for marine growth," Howell adds. "Barnacles and other marine growth can cost companies a lot of money because they slow down ships and barges. They also increase fuel consumption, compared to if their hulls are clean.

"I selected these machines because I'm very practical. I used to be a cowboy, so I've learned how to make do in a lot of different situations. As such, I appreciate innovation — and these machines eclipse anything else on the market.

"They're moneymakers, too. They give us capabilities people are looking for, but don't know about." c



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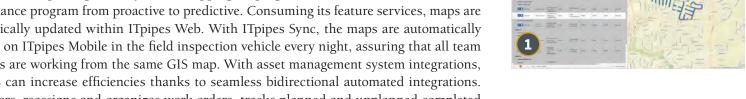
MAINLINE SEWER INSPECTION

By Craig Mandli

>> INFORMATION SYSTEMS

1 // ITPIPES ESRI SOLUTION

ITpipes provides CCTV pipe inspection planning, prioritizing, field collection and data management tools in the fully integrated Esri Solution. This integration allows agencies to turn pipe inspections into mapped, actionable intelligence. Streamlined data management and powerful reporting with dynamic mapping help agencies to take their infrastructure maintenance program from proactive to predictive. Consuming its feature services, maps are automatically updated within ITpipes Web. With ITpipes Sync, the maps are automatically updated on ITpipes Mobile in the field inspection vehicle every night, assuring that all team members are working from the same GIS map. With asset management system integrations, agencies can increase efficiencies thanks to seamless bidirectional automated integrations. It transfers, reassigns and organizes work orders, tracks planned and unplanned completed work, and gives inspection access to all AMS users. 877-487-4737; www.itpipes.com



2 // SERVICECORE SOFTWARE

ServiceCore is a cloud-based, custom-built platform designed for the waste industry. It allows users to streamline challenging processes in a matter of clicks, from scheduling and routing to inventory tracking and customer management, to billing and invoicing. It provides powerful tools to manage a business and provide real-time insights. Plus, each person at the company has customized access to the software and can log in on any device online or in the app. 844-336-0611; www.servicecore.com

>> INSPECTION CAMERAS

3 // ARIES INDUSTRIES MOBILE PATHFINDER SYSTEM

The Mobile Pathfinder System from Aries Industries is a lightweight, portable system for accurately inspecting mainlines that are 6 inches or larger. It includes a powerful transporter, camera and lightweight reel; these components are operated by an all-in-one remote control. The transporter comes in a variety of wheel sizes and is equipped with a rear-viewing camera and an adjustable electric lift to keep the camera centered in a range of pipe sizes. It features a WiperCam pan-and-tilt camera with an in-the-pipe cleaning system and field-replaceable wipers. The camera has a 300-degree viewing angle and LED lighting system to capture pipe details and ensure accurate assessments. The lightweight reel has 1,000 feet of low-friction, multiconductor cable, making the system fully portable. 800-234-7205; www.ariesindustries.com











4 // ELECTRIC EEL ECAM PRO 2

The eCAM Pro 2 from Electric Eel has a built-in battery cradle that accepts a Milwaukee M18 battery. This allows for operation in remote locations or anywhere electricity is not available. This feature is now standard on all eCAM units. Features include a 1.68-inch self-leveling color camera with sapphire lens and housed in rugged stainless steel, a 20 LED light ring with an impactresistant polycarbonate light ring cover and a high-resolution element. A flexible camera spring navigates 3-inch elbows. The unit comes standard with 200 feet of premium 1/2-inch-diameter pushrod (reel capacity available up to 400 feet), industry-standard 512 Hz sonde, 10.4-inch daylight-readable monitor with click-touch controls, and one-touch recording directly to a USB flash drive, voice-over recording, an 8X zoom function, 8-inch wheels for easy maneuverability and a secure-locking reel brake. 800-833-1212; www.electriceel.com

5 // ENVIROSIGHT ROVVER X

The ROVVER X from Envirosight is the pipe inspection system that lets an operator do everything, including run inspections, view and record video, log observations, generate reports, and link directly to asset management software. The Flexspection sewer video capture platform adds even more capabilities to this versatile system. Three video resolution options (SD and HD) allow operators to change file size and resolution depending on the needs of each inspection. Twelve wheel options enable ROVVER X to inspect lines from 4 to 96 inches. Its six-wheel drive with proportional steering navigates past obstacles, and overlapping wheels climb offsets with ease. Powerful motors and a geared drivetrain maximize travel range. Not only can you add side-scanning, laser profiling and lateral launch, you can view data from onboard sensors and assess defects on-screen. The system's firmware updates automatically to the latest features. 866-838-3763; www.envirosight.com

6 // HATHORN INSPECTION CAMERAS H12

The H12 control module from Hathorn Inspection Cameras is equipped with a bright 12.1inch VividHD LCD screen. It is powered by 18V Milwaukee (or equivalent) batteries, and available with PipeStream Wi-Fi technology, which allows the user to directly stream the video inspection to up to four devices at the same time (Apple or Android). This system also comes with a full keyboard, eight pages of text overlay, dimmable light control, record/pause to USB, and sonde control. It is usable in any light condition (including direct sunshine), providing HD picture quality, high contrast and 8X digital pan and zoom technology. Command modules are paired with Hathorn Standard reels, which offer nine camera heads (straight view and self-leveling), five different reel sizes, five different rod sizes, and lengths from 100 to 500 feet. 866-428-4676; www.hathorncorp.com

7 // INSPECTORCAMERAS.COM SCOUT 3-PRO RED 35

The Scout 3-Pro Red 35, distributed by INSPECTORCAMERAS.COM, is a rugged yet compact sewer inspection camera that is easy to use and supplied with a 1-inch self-leveling color camera head. This camera also has a 512 Hz Sonde transmitter, distance/foot counter, time and date stamp, on-screen text writing capability, and MP4 color video recording with snapshot picture function. The 115-foot heavy-duty pushrod cable provides a blend of flexibility and stiffness to allow use in a variety of pipes and conditions. The camera controls are fully self-contained inside an easily removable control case for confined or restricted spaces. 603-267-0400; www.inspectorcameras.com

PRODUCT FOCUS

8 // MEDIT DURASCOPEWIFI

DuraSCOPE WIFI inspection cameras from Medit are known for the durability of the push cable and their ability to withstand repeating cycles of inspections in harsh environments. The new generation of these CCTV systems has an improved Wi-Fi connection that allows connecting a few smartphones/tablets simultaneously, so coworkers can see the live footage from the other side of the street. The camera is fully portable and runs on an 18V Milwaukee battery. No monitor or any other fragile and easy-to-break parts are needed. Just a sturdy, steel frame, premium spiral-wound push cable, and a color camera head with 512Hz sonde. 877-613-2210; www.fiberscope.net

9 // MINICAM PROTEUS LAT150

The **Proteus LAT150** from **Minicam** can inspect lateral pipes up to 150 feet and has an overall tractor crawl distance up to 1,150 feet. The launch mechanism can be adjusted and serviced on site, minimizing downtime and reducing running costs. The unit has 8x8 wheel drive, keeping inspections moving through potential obstructions in the pipe. A hinged midsection on the tractor allows for easy access into 12-inch manholes and runs in mainlines from 6 inches and up. The pan-and-rotate camera is less than 2 inches and includes twin lasers, providing accurate pipe diameter, defect and object measurements every time. 734-744-5557; www.minicam.us

10 // RATECH ELECTRONICS PLUMBER'S HELPER JR.

The Plumber's Helper Jr. pipe inspection system from Ratech Electronics is based on a small-scale reel and comes with 100 feet of mini Gel Rod cable, a removable compact command module with 7.1-inch LCD, a built-in battery and an SD recorder for digital images and video. This mini pipe inspection system is available with a full-spectrum, 1.375-inch, self-leveling color camera; a standard color camera; or any of the company's three micro camera heads — 5/8-, 3/4or 1-inch diameter. 905-660-7072; www.ratech-electronics.com

11 // RIDGID SEESNAKE MICROREEL APX

The RIDGID SeeSnake microReel APX is designed to optimize inspections and engineered with a lightweight, compact profile for easy portability. It offers bright LED lights with high color accuracy and auto-flip imagery delivering crisp, detailed images and ensuring upright viewing angles in a variety of pipe conditions. Paired with TruSense technology, this tool delivers a high-quality in-pipe image with clarity, detail and fewer blown-out areas and sections of the pipe that are too dark to see. TiltSense measures the camera's angle and, when connected to a SeeSnake series monitor, the camera can convey the camera's degree of tilt on the monitor — giving professionals a useful indicator of the pitch of the camera in-pipe. It also comes with a built-in kickstand for in-field versatility with multiple configurations for optimal operation. 800-474-3443; www.ridgid.com

12 // SECON EXTREME SERIES

Extreme Series cordless sewer cameras from SECON come with two 20-volt DeWALT batteries and a charging station. An 18-volt power supply is included for plug-in operation. They have SD card recording and Wi-Fi connection to view inspections in real time on personal smart devices. The unit includes a 7-inch color LCD monitor, 512 Hz sonde/transmitter and a stainless steel camera head. They are available with 100 to 300 feet of push cable and are capable of viewing 1 1/2- to 12-inch pipe. 702-527-5100; www.seconv.com



















13 // SUBSITE ELECTRONICS TRANSTAR TRANSPORTER

The TranStar Transporter from Subsite Electronics is designed with a system approach, creating a powerful and versatile tractor. It is powered by two 90W motors that allow it to traverse various pipe conditions for more than 2,000 feet. The mainline reel's true freewheel capability system aids in minimal drag and zero resistance, allowing for the transporter to go farther in tough conditions. The freewheel system allows for rapid retrieval of the transporter once the inspection is complete. It offers full steering for optimal maneuverability in pipe with a diameter between 6 and 30 inches. The system approach pairs the tractor with the TrakStar camera, which has optional laser crack measurement and inclination for full 360-degree inspection capabilities. Thick side plates and a scratch-resistant window cover make the system durable for all types of inspection projects. 800-846-2713; www.subsite.com

14 // VIVAX-METROTECH VCAMMX-2

The vCamMX-2 from Vivax-Metrotech is a portable all-in-one camera to inspect pipes between 1 1/2 and 4 inches. The control module's 8-inch daylight-viewable LCD screen shows the distance of pushrod deployed, as well as the current time and date. Recordings are made in MP4 video and pictures in JPEG format directly to a USB thumb drive, then instantly backed up to an SD card. The internal microphone allows audio commenting over recorded video. The pushrod is traceable with the use of an external locator transmitter and is available in 100 or 150 feet. The 512Hz frequency sonde is standard equipment. It comes with two interchangeable camera heads. The smaller D18-MX camera is fixed position and 0.70 inch in diameter, and the D26-MX is self-leveling and 1 inch in diameter. 800-446-3392; www.vivax-metrotech.com

>> CAMERA TRACTOR WHEELS 15 // CUA CLAWS CRAWLER WHEELS

Crawler wheels from Cua Claws can help improve footage in wet, slippery PVC or other plastic pipe. The wheels have tungsten carbide furnace brazed to the wheel. An extended range of modes is available that can be retrofitted to the customer's crawler. The company also offers a service to apply its carbide to crawler wheels. Some wheels are stainless and cannot be processed so Cua Claws has a line of replacement wheels of exact fit in mild steel so the grit can be applied. This way the customer can harvest the savings to re-grit instead of replacing the wheels when necessary. 714-697-8697; www.cuaclaws.com

16 // TRUGRIT TRACTION CRAWLER WHEELS

Whether you are looking for traction in newly installed liner that you don't want to shred up, or you need an extremely aggressive wheel to cut through heavy grease, TruGrit Traction wheels can make it happen. Two types of wheels are available. The TruGrit uses a blend of flexible polymer and steel carbide grit to provide added traction in all pipe types and conditions, never getting dull, and only getting better as they wear. The TruGrit Steel is a solid steel wheel with an exterior finish of aggressive carbide grit to maximize traction in heavy grease and debris. Hub adapters enable one universal wheel to fit multiple OEMs, including Aries, CUES, Envirosight, RapidView IBAK, Rausch, Subsite and Schwalm. 407-900-1091; www.trugrittraction.com

PRODUCT **FOCUS**

>> INSPECTION VEHICLES

17 // CUES CCTV INSPECTION VEHICLES

CUES offers custom truck-, van-, ATV- or trailer-mounted systems for TV inspection, condition assessment and rehabilitation needs. Made to withstand the most severe conditions and ergonomically designed for comfort and efficiency, vehicle-mounted systems can include TV inspection equipment for sanitary and stormwater lines, laser and sonar pipe profiling systems, mainline joint and lateral sealing, and lateral reinstatement cutters for the relining industry. Equipment can be ergonomically mounted to inspect 6- through 200-inch mainlines and 3- through 8-inch lateral services. The truck interior can be customized, with cabinets, equipment and mounting configuration, to fit unique requirements. Truck- and trailer-mounted grout rehabilitation systems are available for mainline, manhole and lateral joint sealing and can be equipped with the latest CCTV equipment and decision support software for television inspection with documented condition assessment. 800-327-7791; www.cuesinc.com



18 // RAPIDVIEW IBAK NORTH AMERICA INSPECTION VEHICLES KUBOTA UTV CONVERSION

RapidView IBAK North America specializes in a variety of inspection vehicles that allow for the safe transport and operation of IBAK equipment. One of the more unique conversions is the Kubota UTV off-road inspection vehicle. Whether you're inspecting hard-to-reach mainlines and laterals, or need to access off-road manholes, the Kubota UTV will get you where a normal size truck can't. The conversion is equipped with an office space in the front with a full-size computer, ample equipment storage in the back, and slide-out generator storage. The Kubota UTV has the space to mount any size IBAK inspection system, from a KW SI cable reel or compact MainLite system, all the way up to a full-size HD mainline and lateral launch system. 800-656-4225; www.rapidview.com



>> MAPPING SOFTWARE

19 // WINCAN WEB

WinCan Web delivers a series of enterprise maps that give leadership a sky-high view of a city's sewer system, and where inspections are taking place throughout the day. Designed for fast, easy project editing and defect coding, it provides avenues for processing and reviewing any type of data. Collect inspection data, then visualize results from anywhere, with seamless integration with Esri's ArcGIS online, or on the WinCan Maps native mapping software. The program's enterprise-tier inspection manager helps wastewater and sewer managers track maintenance and inspection work orders and determine the progress of each. This not only increases productivity for office teams creating and monitoring work orders, but allows tracking the progress of individual crews throughout the day, providing an enhanced layer of accountability and team management. 877-626-8386; www.wincan.com **c**





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CASE **STUDIES**

MAINLINE SEWER INSPECTION

// By Craiq Mandli

PUSH CAMERA AND ROLLER SKID SAVE TIME AND MONEY



PROBLEM / By the time a plumber showed up at a home in Valatie, New York, the customer was stressed because the sewer pipe was backing up. No amount of plunging had worked and professional help was needed. An access plug in the pipe leading to the septic tank was easily accessible. Once removed, several buckets were used to collect sewage.

SOLUTION / The plumber installed the CPI Products Trapmaster to get a 1.5-inch push camera into the 4-inch pipe and was able to pass by the remaining debris to view the blockage and determine exactly where it was. It turned out to be the last remaining section of a more than 30-year-old asphalt-coated paper pipe that had collapsed. They were able to pinpoint this by using the push camera with the roller skid.

RESULT / The collapsed section was easily accessed, and it saved time since digging up the entire pipeline wasn't necessary. The repair was completed quickly, and the customer has a proper line all the way to the septic tank. 413-443-0925; www.cplasproducts.com

SOFTWARE ENHANCES CRAWLER'S FUNCTIONS IN PRESSURIZED PIPE



PROBLEM / Contractor Action Pipeline of Arizona was tasked by Tucson Water to detect and repair a leak in a pressurized 36-inch pipeline.

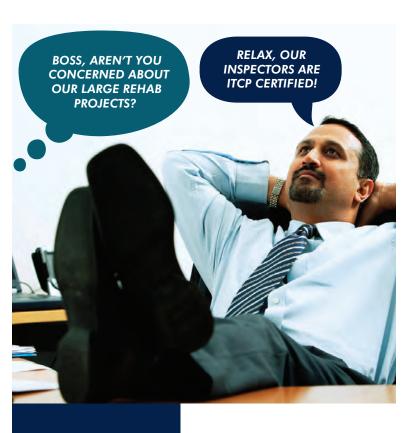
SOLUTION / Given the inaccessibility of the deep-water environment, the company used its Deep Trekker DT340 crawler specially designed for such tasks. Action Pipeline controls the unit using POSM Lite Software. "Without Lite, you can't edit or add comments to the Deep Trekker footage 'live.' Instead, you must review the video and add observations after the inspection is complete. That takes longer and is less efficient," says Andres Amado, Action Pipeline's vice president of operations. "Lite is a streamlined, inexpensive software that removes options we didn't need. And, most important, it includes the ability to edit Deep Trekker video inspections live. We performed an internal investigation in the pressurized system. We installed an ink nozzle [onto the Deep Trekker unit] to seek and detect a leak 'live' thanks to POSM Lite. We inserted the robot into the pressurized pipeline and located a defect in the mortar. We injected the ink and watched it get sucked out of the pipe to document the spot in real time."

RESULT / Because they paired Lite with their Deep Trekker, Amado says, "We were able to quickly and efficiently pinpoint the defect, dig it up and repair it." 859-274-0041; www.posmsoftware.com. c









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INDUSTRY **NEWS**

Registration open for September municipal sewer grout school

Registration is open for the Municipal Sewer Grout School taking place in Waukesha, Wisconsin, on Sept. 28 and 29. The course, presented by grout industry experts from Aries Industries, Avanti International and Logiball, will show how and why injection grouting is utilized to stop unwanted groundwater infiltration that enters mainlines, laterals, lateral connections and manholes. The two-day course provides classroom and demonstration sessions, which present technical information on proper technique for grouting operations, lateral and mainline test and seal packer operation and maintenance, mixing and optimizing AV-100 acrylamide grout performance, review and demonstration of new NASSCO/ICGC grout specifications, live infiltration and grout sealing demos (mainlines, laterals and annular space), grout testing and monitoring information and methods, and Safe Operating Practices Program certification. For more information and to register, please visit www.avantigrout.com/news-and-events/ events/item/municipal-sewer-grout-school-waukesha-2022 c





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PRODUCT NEWS



PRODUCT SPOTLIGHT

COMPACT COMBINATION CLEANER ANSWERS THE CALL IN TIGHT QUARTERS

By Craig Mandli

Combination sewer cleaning trucks are an important tool in a contractor's toolbox. But when working in densely populated areas, the large trucks are often too cumbersome to operate.

Smaller trucks that offer the same cleaning power, while being more efficient and easier to navigate, are becoming more prevalent in the industry. The operator can focus on cleaning the line and resolving the customer's problem, rather than worrying about access points for a large vehicle. The Defender, a complete all-in-one skidmounted system from Spartan Tool, answers the call.

The Defender is delivered ready to mount onto a vehicle, or the unit can be purchased in a package with a truck. According to Mike Sekach, national sales director for Spartan Tool, the Defender is known as a "single-resolution vehicle," meaning one vehicle that can be used to complete the whole drain cleaning job. There's no assembly required on the customer's end, meaning the Defender is ready to work from day one.

"You can remove waste with the powerful onboard vacuum pump and then clean and clear the line with the high-pressure jetting system," he says. "If you were relying on mechanical drain cleaning machines or hydrojetters alone, you would have to bring a secondary vehicle on site to remove waste before you can attempt to clear the blockage."

The Spartan Defender was designed in partnership with Spartan's sister company, Rioned, who also developed the company's Urban line of skid-mount jetters. It includes a 396-gallon tank with 264 gallons of waste and 132 gallons of freshwater capacity, a powerful



Speck NP45 pump offering 3,000 psi at 10 gpm, a Kubota D1105 24 hp diesel engine, Gardner Denver SLS-54V suction pump, an Econtrol digital display, a Riomote nine-channel radio remote control, a sidemounted suction hose reel with direct connection to the waste tank, an engine and pump compartment, and side-mounted storage boxes. It allows the operator to remove waste from an operating sewer, and is suitable to be used for grease trap or small septic tank cleaning and maintenance.

"Our customers have been very excited about the Defender," Sekach says. "The compact, efficient footprint really sets it apart. The Spartan Defender is ideal for a lot of applications, and puts high-end combination truck capability within reach for most businesses and municipalities." 800-435-3866; www.spartantool.com

1 // SUPERIOR 5-E ELECTRIC SMOKE BLOWER FINDS FAULTS, ODORS, LEAKS AND INFLOW

When testing laterals or building plumbing, or pumping and inspecting septic tanks, smoke testing is a quick and effective way to find plumbing faults that lead to odors, leaks and inflow. Superior Signal Company's Superior 5-E Electric Smoke Blower easily connects to any cleanout, port or vent to smoke test the entire system in just a few minutes. The Superior 5-E electric smoker gently pushes smoke throughout a system to find cracks or leaks and quickly identify problems. Made in the U.S., the durable Superior 5-E electric smoker is competitively priced and comes complete with 8 feet of industrial grade hose. Used with Superior Smoke Candles, this cost-effective solution is ideal for hard-to-find odors, leaks and other faults in commercial, residential and municipal facilities. 732-251-0800; www.superiorsignal.com/CL5







2 // GENERAL PUMP GP BLASTER NOZZLE

The new stainless steel GP Blaster nozzle from General Pump has a high-impact design that offers superior cleaning, further enhancing the effectiveness of a spray system. The Blaster's elongated body cleans surfaces from longer distances and is also available without the elongated body as a rapid change nozzle holder. 888-474-5487; www.generalpump.com

3 // SOUTHLAND TOOL COW UDDER MULTI-HOSE ADAPTER

The Cow Udder from Southland Tool is a multi-hose adapter for your suction/vacuum machine. It has an 8-inch flange that clamps directly to an 8-inch suction hose or tube. The standard is a flat flange for Vactor or Vac-Con. It is also available in Band-Loc in either male or female. The Udder comes with four inputs: 3-inch male and female camlock ends and also 2-inch male and female camlock ends. Multiple hoses can be used if needed or leave one open for better airflow. Each of the inlet ports also comes with its own end cap. It's made of all steel with threaded ends and aluminum camlocks, weighs only 10 pounds and is very compact. 714-632-8198; www.southlandtool.com c

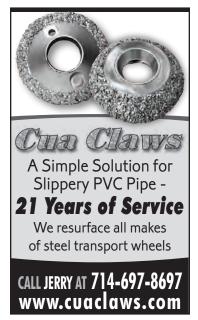




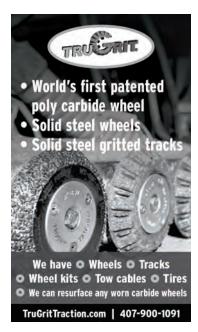








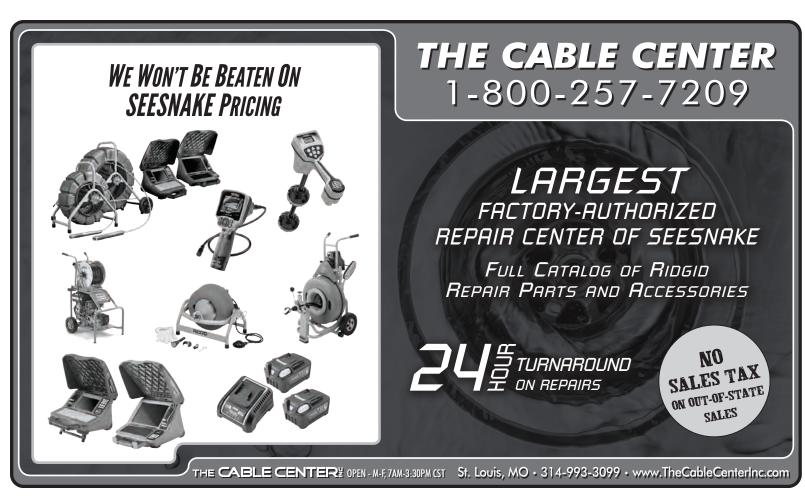
















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Alfred A. Montapert

American engineer, philosopher, and author

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