The official publication of ALOA SPAI, an international association of security professionals February 2023

KEYNOTES

SECURING YOUR SUCCESS

WHAT IS ELECTRICITY?

Learn how electricity works so you can better understand electronic access control

Sometimes, Crime Pays — For Locksmiths

Burglaries are sadly sometimes good for business

PLUS

BEST Hacks

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Lisa, Vivian, Tara, Stephanie

Features

Spotlights

What's New

Departments

FRAMON
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DBM-1

Flat Steel Key Duplicator

Make Quick Work Out Of Flat Steel Key Duplication. You can expect years of trouble-free service from your DBM-1. Cut Master Padlock corrugated keys, locker, letterbox, and safe deposit box. Even cut two keys at a time!

SDK1

Safe Deposit Killer Kit

Framon's new Safe Deposit Killer Kit makes quick & easy work out of drilling S & G and Diebold safe deposit box locks. When traditional methods can't be used due to a plastic or flimsy door the killer kit is your answer. Simply insert the appropriate guide into the keyway and use a hole saw to drill out the face of the plug. Easy entry in minutes. Kit comes with three guides and two-hole saws in an easy to store plastic carrying case. Made in the USA.

Impressioning Tool

A best-seller from Framon that makes key impressioning easier than ever. This tool is self-contained; it needs no wrenches and has no screws to strip out. This tool holds practically any key blank; keys will not rock or slip. The firm hand grip provides complete control when impressioning keys.

Part# IMMS001

Equipment Key Sets

Blue Dog Keys is now offering equipment key sets. These assortments contain 24 of the most popular equipment keys from manufacturers such as John Deere, Komatsu, Kobelco, Hitachi, Cat, Kubota, JLG, Daewoo, Bobcat, JCB, Yanmar and more. The 40-key set adds the next most popular tier.

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KEYNOTES

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Mission Statement: The mission of the ALOA Security Professionals Association, Inc., as dedicated members of the security industry, is to ensure professional excellence and ethics; create a public demand for professional locksmith services; represent and speak for the locksmith industry; and expand the exchange of trade information and knowledge with other security-related organizations to preserve and enhance the security industry.

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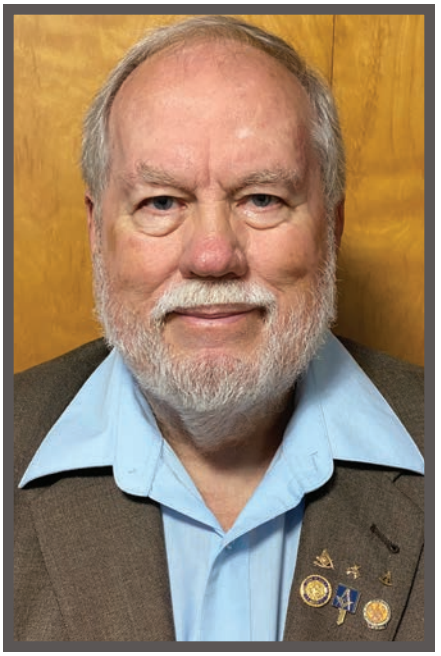
Get Versed In Electronic Access Control



Here it is, February already. In this issue, we cover electronic access control. How many of you are already in this field? It is a rapidly growing area, and there is plenty of money to be made. It takes a fair amount of training (just like safe or auto work), but the classes are out there. There will be some at ALOA 2023 in Orlando in August, and there are also many put on by the manufacturers. Do you have to be an expert in all the different brands? No. Just pick one or two that cover a lot of installations and get proficient in them. It does not hurt to know a little about the others, but it is not necessary to know them inside out to be successful.

"It takes a fair amount of training (just like safe or auto work), but the classes are out there."

Upcoming Event

Hardware Sales will once again be having a trade show March 17. It has been several years since they have had one. And don't forget about SAFETECH coming up in April. Registration is open, so reserve your hotel room and sign up for classes before they fill up. You can get more information on SAVTA.org, or contact education@aloa.org. Time to get some education and meet back up with old friends.

Keep saving the dates for ALOA 2023 in Orlando too. That will be August 6-12, and it's always a good time and a great way to get a lot of education in one place. And do not forget the online meetings. There is the Locksmiths United monthly meeting on the first Monday night of each month, the Security Locksmith Association meeting on the third Wednesday of each month and the LSA meeting on the second Thursday of each month. These are Zoom meetings that you can attend and learn from in the comfort of your own room (pants optional). If anyone knows of any other Zoom meeting, please let me know. I will try to attend meetings if I know of them.

Bill Mandlebaum, CML
President
ALOA Security Professionals Association, Inc.
president@aloa.org

Hurry to Register for SAFETECH

As you've likely seen, SAFETECH 2023 registration is open. We will be in Reno, NV, at the Atlantis Casino Resort April 17-22. We're happy to be holding the convention at this new-to-us and newly renovated venue. It's convenient for attendees, as it's close to the highway and has a lot of free self-parking for hotel guests.

If you haven't seen it yet, there is a full class listing in the registration brochure on SAVTA.org. Even for those of you with no or limited experience in safe work, this convention will be beneficial for you. SAFETECH will provide you the knowledge to get started in this lucrative segment of the industry, and you can find a mentor or two as well. One of the best things about this convention is the feel of it — it has a close-knit, family-like feel to it. Everyone is always willing to help each other out, share information and get to know each other. If you haven't been, you should go this year.

Visit www.SAVTA.org and go to the Convention tab to get more information and the link to register. You have until March 24 to get the early-bird pricing for class registration. Go ahead and book your hotel room as well, as those often fill up. You have until March 22 to get the group rate, and there's a link on SAVTA.org for that as well.

"Thank you so much to all who have renewed so far. If you haven't yet, please go ahead and do so before you lose your benefits!"

Thank You for Renewing

As you know, membership renewal packets went out to you all a few weeks ago. Thank you so much to all who have renewed so far. If you haven't yet, please go ahead and do so before you lose your benefits! The March issue of *Keynotes* will be the last one you receive if you fail to renew.

If you have any questions or need any assistance, please contact membership@aloa.org. We are always here to help, and we can send you a list of member benefits you can take advantage as well.

Free Webinars for IAIL Members

You'll see in the IAIL column in this magazine that we will be rolling out free webinars this year for IAIL members. IAIL members often work as expert witnesses in court cases, and these webinars will give you your own experts to learn from. Every two months, you'll hear about real-life cases and learn what to do (or not). Look for more information coming soon! If you're not an IAIL member, think about joining. Forensic work is a great way to gain more income from your expertise.

This webinar series is one way we are working to add value for our members — that's something we try to do for our members in all of our divisions. If you have ideas, always feel free to get in touch. We'd love to hear from you.

Thank you for your support, and we will see you in Reno!

Mary A. May

Mary A. May
Executive Director
mary@aloa.org

Automotive Convention: Save the Date!

The International Association of Automotive Locksmiths (IAAL) — ALOA's division for automotive locksmiths — will holds its first convention September 14-16 in Kansas City. Join us as we get "On Target" for leading the industry in automotive education and new products! Classes, events and the Expo will be held at the Kansas City Convention Center, which is right across the street from the host hotel, Loews Kansas City Hotel.

Look for more information soon! For sponsorship and exhibiting opportunities, please contact Kelly Parker at kelly@aloa.org or (912) 713-9680.

New GPLA Board Sworn In

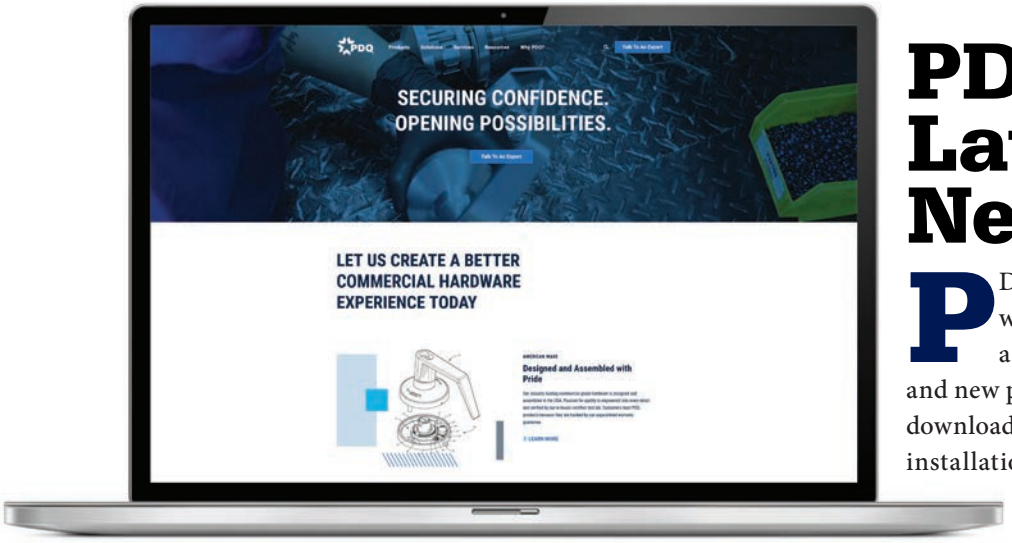
ALOA Northeast Director Tony Wiersielis was on hand for GPLA's recent meeting, where he swore in their new board members and officers. Congratulations to the new leaders!

ALOA Northeast Director Tony Wiersielis swore in GPLA's new leadership.

Southern Lock to Hold Trade Show and Launches New Website

Southern Lock will hold its 2023 Trade Show and Learning Expo June 21-23 at the Hyatt Place Downtown in St. Petersburg, FL. There will be 2½ days of classes plus the trade show and a cocktail reception. For more information, contact Sarah Duncan at sduncan@southernlock.com.

The company has also launched a new website at www.southernlock.com. It includes a new online store with e-commerce capabilities and new customer resources. New features for accounts include notations of previously purchased items, wish lists and open backorders. Previous website users will have to re-register with a new username and password.



PDQ Launches New Website

PDQ has unveiled its new website at www.PDQLocks.com. Features include an online product catalog, and how-to and new product showcase videos. There is also a downloads section with parts manuals, templates, installation instructions, price books and more.

NEWS BRIEF

Codelocks Inc. has announced a strategic alliance with D&D Technologies, a manufacturer of rust-free gate hardware. The alliance will position Codelocks to expand its Gate Solutions by Codelocks range of locks to the fence industry. The Gate Box Kits include a Codelock, latch and accompanying lock box and hardware. Gate Panic Hardware Kits are also available and include the Codelocks panic bar, panic trim and accompanying panic hardware components. For more information on Codelocks, visit www.codelocks.us

CODELOCKS AMERICAS

PRODUCT BRIEFS

Keyline USA has released Liger software version 4.04.0, DB 3.34. It's been updated with new cutting systems as well as some corrections. New keys will also be available for the new Messenger portable key cutting machine. The machine allows users to cut car and residential keys with the KDT app, which has been redesigned and is available for Android smartphones and tablets.

Messenger is **Keyline**'s new 22-lb. portable key-cutting machine for edge, laser and dimple keys. It's controlled through the Keyline KDT App and can be powered by traditional electric or rechargeable battery. Packages are available, including one with the machine, battery, tablet, clamps, two cutters, two tracers, an adaptor and a two-year software subscription for $4,950.

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  A+ Safe & Lock LLC

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- **Yiftach M. Barouch**
  24Hours Locksmith Near Me Corp.

KANSAS
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- **Christopher T. Brotherton**
  Johnson County Key Service
  Sponsor: Jack Iturralde, CAL

MASSACHUSETTS
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We Need Your Help

Attention, ALOA Members: Help us eliminate the industry scammer problem by screening these applicants, who are scheduled for clearance as ALOA members, to ensure they meet the standards of ALOA's Code of Ethics. Protests, if any, must be made within 30 days of this *Keynotes* issue date, addressed to the ALOA membership department, signed and submitted via e-mail to membership@aloa.org or via fax to 469-543-5241. For questions, contact Kevin Wesley, membership manager, at Kevin@aloa.org or (214) 819-9733, ext. 219.

CALENDAR

For a complete calendar of events, visit www.aloa.org.

MARCH
March 17
IDN-Hardware Sales 2023 Trade Show
Novi, MI
www.idn-inc.com

March 23-25
Banner Solutions Security Professional Trade Show & Training Expo
Houston, TX
www.bannersolutions.com

APRIL
April 17-22
SAFETECH 2023
Atlantis Casino Resort
Reno, NV
conventions@aloa.org
www.aloa.org

AUGUST
Aug. 6-12
2023 ALOA Convention & Security Expo
Hilton Orlando
Orlando, FL
conventions@aloa.org
www.aloa.org

SEPTEMBER
September 14-16
IAAL Automotive Convention
Kansas City, MO
conventions@aloa.org
www.aloa.org

OCTOBER
October 25-29
Yankee Security Convention
The MassMutual Center
Springfield, MA
yankeesecurity.org

SAFETECH Is Almost Here!

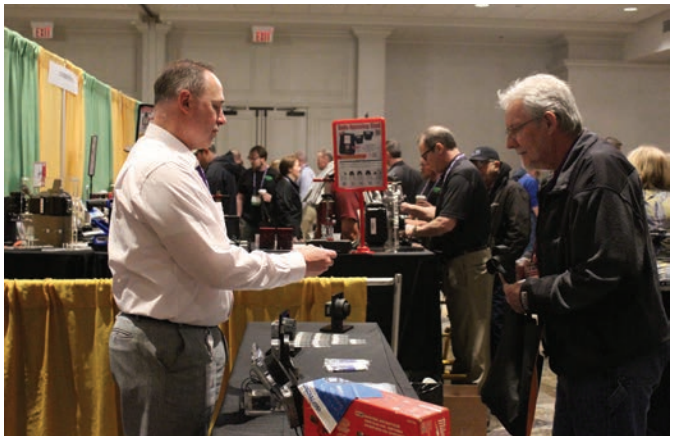
SAFETECH 2023 is just around the corner. Have you registered yet? The early discounted registration deadline is March 24, so hurry to choose your classes before some of them fill up. You can find a link to register at www.aloamembers.org, and full convention information is available on www.SAVTA.org on the Convention tab.

Online, you can find the full schedule with class listings. There's something for everyone! If you're new to safe work, there are basic classes like Mechanical Combination Lock 101 or Intro to Key-Operated Safe Locks and Basic Picking. If you have a little more experience, there are tons of classes to choose from, from those covering electronic locks to manipulation and forensics.

Events

SAFETECH is a great opportunity for networking. The scale of the convention makes it easy to meet and get to know everyone attending, and you can make invaluable connections to help get and give referrals, grow your business or meet with manufacturers and distributors.

The trade show allows for learning



about all the latest safes, tools and locks. Take advantage of all the show specials, and stay around all day for a chance to win a prize from one of the drawings!

The Swap Meet and Friends of SAVTA Live Auction also provide an opportunity to pick up some good deals on tools, equipment and collectibles. What will be there this year? Attend and find out!

Reserve Your Hotel Room

The room block for SAFETECH usually sells out, so don't wait to reserve your room. You have until March 22 to reserve your room as part of the SAFETECH room block at the discounted rate. We will be at the Atlantis Casino Resort, which is away from the main strip but close to a lot of dining and activities. There is complimentary self-parking for hotel guests as well as a complimentary airport shuttle.

Reservations can be secured by calling the hotel toll-free at (800) 723-6500 and using the group name "SAVTA" or "SAFETECH." Reservations can also be made online using the hotel link listed under the Convention tab on www.SAVTA.org.

If you have any questions, please email conventions@aloa.org or call (800) 532-2562.

ALOA and IAAL Conventions

While SAFETECH is coming soon, keep the ALOA Convention & Security Expo on your radar! Be a part of something cool August 6-12 at the Hilton Orlando. More information will be coming soon on ALOA.org and in *Keynotes*.

And the biggest news is that there will be an automotive-only convention put on by the International Association of Automotive Locksmiths (IAAL) in September! The IAAL — the automotive division of ALOA — will holds its inaugural convention September 14-16 in Kansas City. There will be 2-1/2 days of classes, events and the Expo held at the Kansas City Convention Center, which is right across the street from the host hotel, Loews Kansas City Hotel.

We will be rolling out more information soon, but feel free to send any questions you have to conventions@aloa.org. For sponsorship and exhibiting opportunities, please contact Kelly Parker at kelly@aloa.org or **(912) 713-9680**.

Laws Institutional Locksmiths Should Know

Steve B. Fryman, CRL, CAI, CISM, AFDI, discusses important laws affecting your work.

When driving, I enjoy looking at stickers and decals on the back of vehicles. Usually, the message is related to an interest the vehicle owner has. It might be related to fishing, pet adoption, favorite sports team, alma mater, etc. What if we put sentiments related to our professions? For lawyers: "I sue you." Doctors: "I heal you." Institutional locksmiths: "I protect you." Quite often, I forget or minimize the importance of the mission we have as security professionals. Unfortunately, until some tragedy with loss of life like Sandy Hook, Marjory Stoneman Douglas or Columbine happens, we continue in our routine lives doing what we know best and journey doing our due diligence.

Meanwhile the safety and security administrative world travels along on a parallel path. We have an active partnership with the NFPA, local fire marshal, AHJ, state and federal government, law enforcement and more. We have acts, laws, policies and protocol that are set before us. Our role is to act as boots on the ground to provide the first layer of protection. In this article, I'd like to share some history regarding acts and laws we should be familiar with. This is such a broad topic that I am only going to mention two: one old and one new.

The Old: Cleary Act of 1990

The Cleary Act was named for a first-year college Lehigh University student who was murdered in her dorm room. A fellow student unknown to her stabbed, raped and strangled her. Jeanne Cleary left the dorm room door unlocked, anticipating the arrival of her roommate who had forgotten her key. In addition, multiple doors were propped open, allowing the assailant easy access. This happened in 1987.

"My take on the provisions related to key control are that the property owners should have a key system with proprietary keyways with only restricted authorized duplication — like Medeco, for example."

In 1990, a law was passed requiring universities to disclose crimes committed on campuses. The annual security reports require universities to disclose policies concerning campus safety and crime prevention, sexual assaults, alcohol and drugs, access to campus, and other important safety information. Compliance with provisions is directly tied to the Violence Against Women's Reauthorization Act of 2013. Each year before October 1, institutions must each publish and distribute their Annual Safety and Fire Safety Report. This report is to be given to students, staff, faculty and the U.S. Department of Education Campus Safety and Security. The report contains the three most recent years of campus crime statistics and security policies.

Violent acts are not new for university campuses. In 1969 at Penn State, 22-year-old graduate student Betsy Aardsma was stabbed to death in library stacks — and the case remains unsolved. Crimes like this committed prior to the Cleary Act were not widely publicized. Parents and potential students did not know the safety records of a potential school they were deciding to attend. This murder has haunted the campus for over 50 years.

Our campuses are no strangers to human tragedy. There have been serial killers who have made headlines, such as Ted Bundy at the university I work at, Florida State. Bundy killed two students at the Chi Omega sorority January 15, 1978. Believe me, it brings me no joy to discuss these sad and unfortunate events. What it *does* do is give me a renewed purpose to my work as a security professional.

Newest Law: Miya's Law in Florida

This Florida state law — in effect as of Jan. 1, 2023 — gives protection to renters in transitory rental situations — long-term rentals like apartment complexes, not hotels. In September 2021 in Orlando, FL, college student Miya Marciano was murdered in her off-campus apartment. A maintenance worker who had not been vetted entered her apartment with a master key. The worker had committed prior felonies.

Here are Miya's Law provisions:

- Employees must be vetted with background checks.
- Notice to enter the rental space must be given to the renter 24 hours in advance. This was increased from 12 hours.
- Rental companies must record who has access to high-level keys.
- Property owners must also have key control policies in place that can be audited by state officials.

My take on the provisions related to key control are that the property owners should have a key system with proprietary keyways with only restricted authorized duplication — like Medeco, for example. I would also recommend serialization of each key. If this is not done, there is no accountability. Otherwise, anyone could make unauthorized copies. A lot of rental companies have their own key machines.

It would be a great asset to house high-level keys in a Traka box, providing an audit trail on the metal key.

These laws I have mentioned were born out of lots of sadness and misery — all in an attempt to circumvent repetition of a common tragedy. We know that if people are determined to do wrong, they cannot be stopped. This probability should not stop us from doing good. What we do, we do well, and we should take pride in knowing that we can be the difference makers.

Steve Fryman, CRL, CAI, CISM, AFDI, is a second-generation locksmith with over 45 years of experience. He has been a business owner for 20 years and is currently working at Florida State University as a key compliance manager. Steve is a subject matter expert in institutional shop management.

Off Key

Craig Bernasconi spots a problem with this STUV lock key before he even arrives at the job.

Figure 1. The customer's safe was a Neutron Star.

Figure 2. The top of the key was stamped with "STUV."

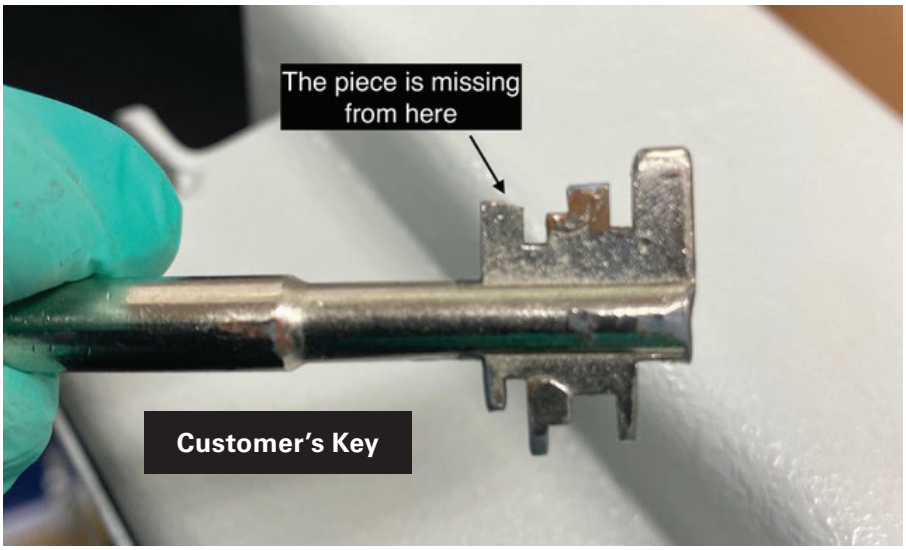


Figure 3. The customer's key was faulty.

It was during the Covid-19 lockdown in the UK — the one that seemed to be never-ending. I was bored out of my tree, to be honest, but thankfully, I received a call from a potential client asking if I was willing and able to work and if I could open her safe quite urgently.

Since the lockdown in the UK, the safe-opening business had been a bit quiet for a few weeks, and in my humble opinion, a safe opening job is a heck of lot better way to spend my time than power-washing flags, cleaning, tidying or watching old TV repeats. So believe me, I had to resist the temptation to say I would do it for free and let her continue her call!

Answers in the Photo

She explained that the business was a used car business and that the safe contained a small amount of petty cash but, more importantly, the keys for all of the used cars that they were hoping to start selling as soon as they could reopen — hopefully, a few days later.

The safe also contained the keys for the building's internal doors, which needed to be opened as quickly as possible so that the company could have a specialist cleaning company perform a deep clean.

She explained that they did have a key for the safe but it no longer opened the safe lock for some reason. I asked the potential client if she had a spare safe

key. She didn't. I asked if the safe had been moved recently (in case a relocking device in the safe had perhaps operated), but no, it had not.

She sent me a photo of the safe via WhatsApp. I could immediately tell that it was a Neutron Star safe — probably a Grade 1 or a Grade 2 safe with an overnight insurance rating between around $12,000 to $20,000 cash or $120,000 to $175,000 in valuables, depending upon which model it turned out to be (see *Figure 1*).

Once I had received the photo of the safe key, I suspected that I knew, with around 90% certainty, what the problem was. The key was obviously for a STUV lock (it says so on the top of the key in *Figure 2*), and I knew from experience which model of lock was the most likely to be fitted to the safe: a STUV model 4.19.92 high-security double-bitted lock. The locks have seven variable levers and one fixed-height lever.

If you examine the photo of the key carefully (*Figure 3*), and if you know what to look for, you can see that one of the teeth from one of the key bits has broken off. With this very tiny piece of the key missing, the key will not align the levers correctly inside the lock and, therefore, the lock will not open. Hopefully, you can see this in the photo.

I gave the potential client a price, including travel to the premises, which were located close to Chester, an old city that dates back to Roman times. The city is around 60 miles from our base, so it would be about a 120-mile round trip.

She wanted me to give her a price to open the safe and replace the STUV safe lock with two new keys. I did, and she agreed to the cost immediately. She asked if I could open the safe the following day ("You bet I can," I thought), and the job was arranged.

Figure 4. Some of the author's make-up key pieces are shown.

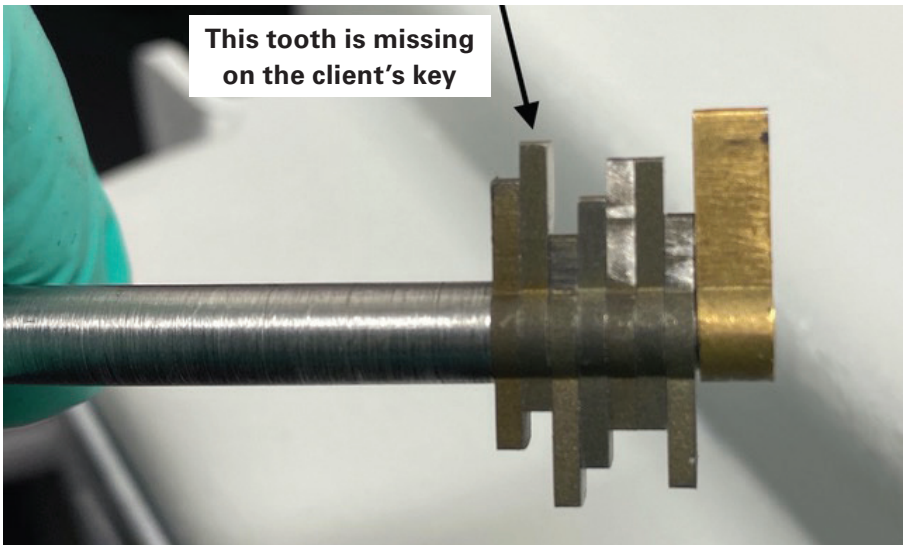


Figure 5. The make-up key is ready to go.

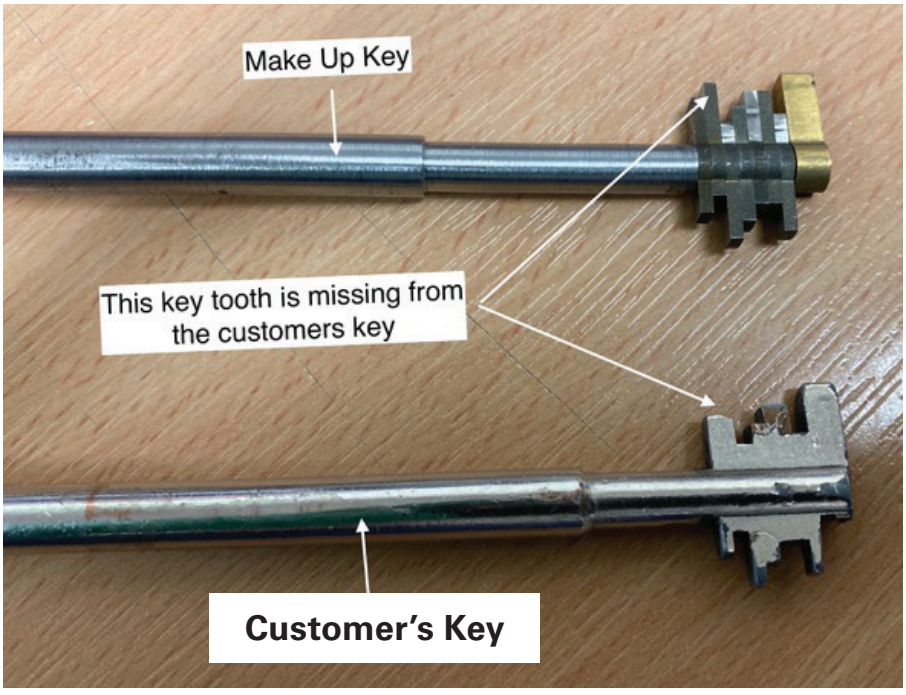


Figure 6. The tooth is missing.

"Once I had received the photo of the safe key, I suspected that I knew, with around 90% certainty, what the problem was."

The Make-Up Key

The following morning, I set off early and arrived at the job site by around 10 a.m. Traffic was almost nonexistent, so I made the journey — which would normally take me about 90 minutes — in around 70 minutes. I could get used to this!

Once in the reception area of the building, I was asked to clean my hands with a disinfectant gel and to keep my face mask on for the duration of my visit.

I was then shown to the safe by the client. She gave me her damaged safe key and told me to let her know once the safe was open. Then she left me to it.

I was thinking that things couldn't get any better than this — a nice warm building, plenty of free parking, hardly any traffic, no customer pestering me with "how long will it take?" and, best of all, a locked-out safe to play with!

I put the key into the safe lock and turned it as if to open the lock. I knew it was very unlikely to work, but depending on which side of the key bit is missing teeth, it is sometimes possible to "jiggle" the lock open. Fortunately (for me) this didn't work, so out came my trusty STUV lock make-up key.

By carefully "reading" the customer's key, the idea is to work out what the lever heights are actually supposed to be. Then, using the small fabricated "key pieces," you mimic the actual working key on what is called a "make-up key."

I usually write down what I think the heights of the damaged key bit will be, working from the bolt end of the key bit to start. I read the damaged key bit as 4613552. Bear in mind that STUV numbers levers from low to high, so 1 is the lowest lever height, and 6 is the highest.

In these situations, I use the make-up key pieces to assemble a key, one tooth at a time. Once completed, I can compare my make-up key to the original key, and if it looks approximately correct, I very carefully insert it into the lock, gingerly

Figure 7. The safe door is shown.

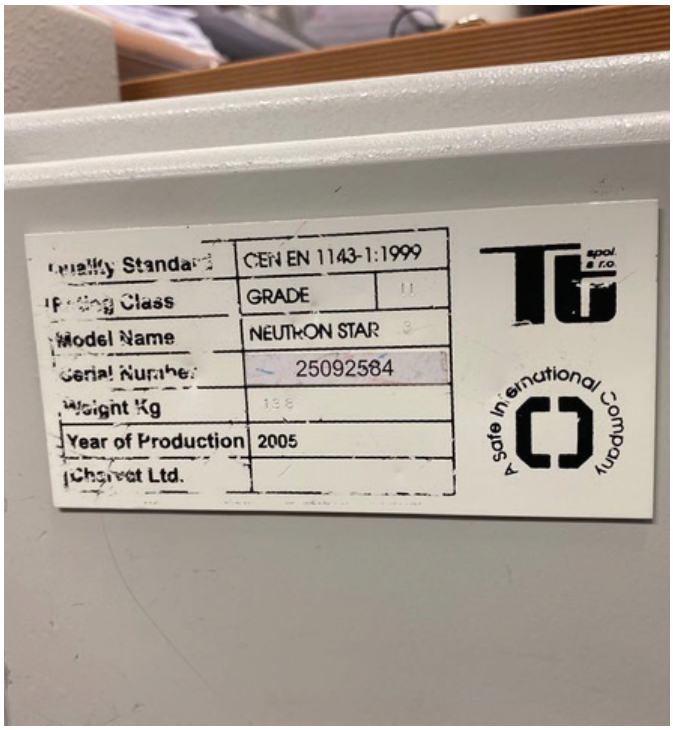


Figure 8. The safe was a Grade 2.

Figure 9. Drill-deflection plates are fitted in the door.

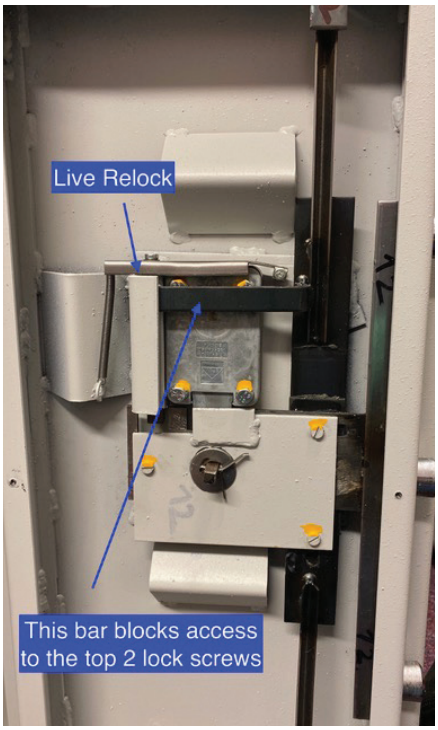


Figure 10. The bar is blocking the screws.

Figure 11. The lock boltwork covers the lock-fixing screws.

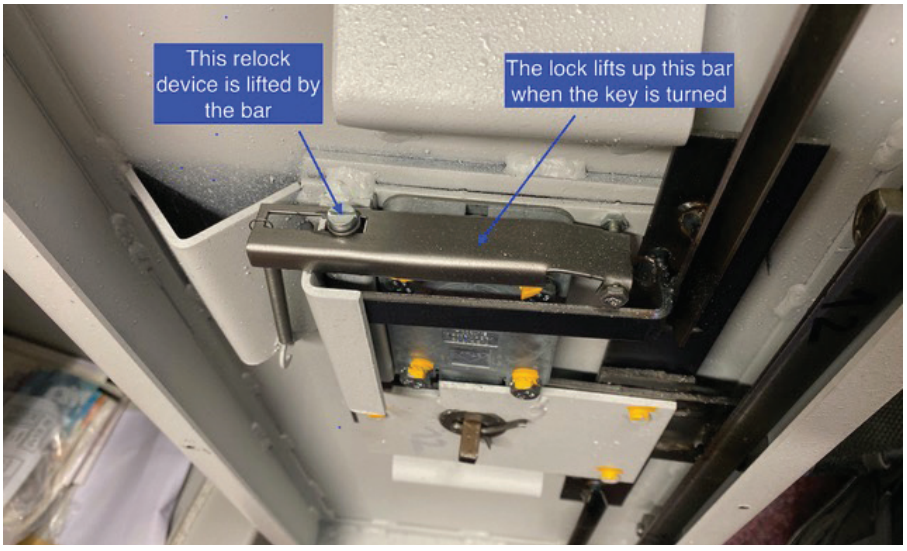


Figure 12. The live relock is shown from above.

Figure 13. The locking screws have just been removed.

turn the key and see if the lock opens. If it doesn't work the first time, I simply modify the key teeth on the make-up key until it does work.

How'd You Know?

You may be asking how I knew from the photo of the key that a tooth was missing. I will try to explain. The teeth on a high-security key like this one are symmetrical. In other words, teeth that are opposite from each other add up to the same total height. So if you look, for example, at the first lever cut on the customer's key, you see that the top lever is quite a low cut, and the exact opposite side of the key bit is a high cut. If you were to put a vernier gauge on the key teeth, the opposing teeth should add up to the same value.

Now look at lever number 6. You'll see the top tooth height is virtually the same height as the number 7 lever. But look at the opposite side of the customer's key bit, and you'll see that the number 6 lever is

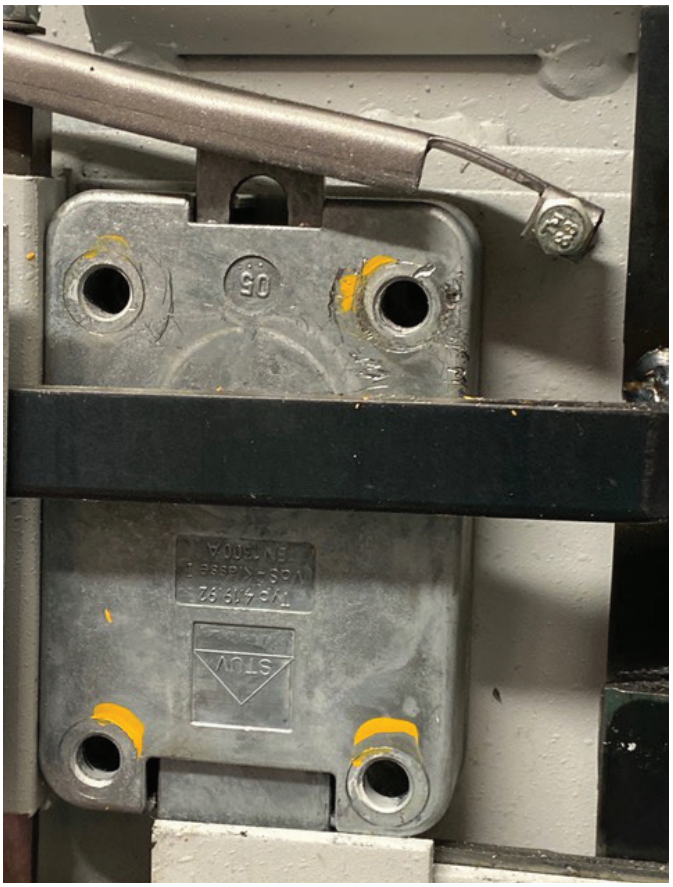


Figure 14. The original lock is open, and the bolt extends out of the back to lift the relock arm.

Figure 15. The lock has been removed.

Figure 16. The live relock is shown.

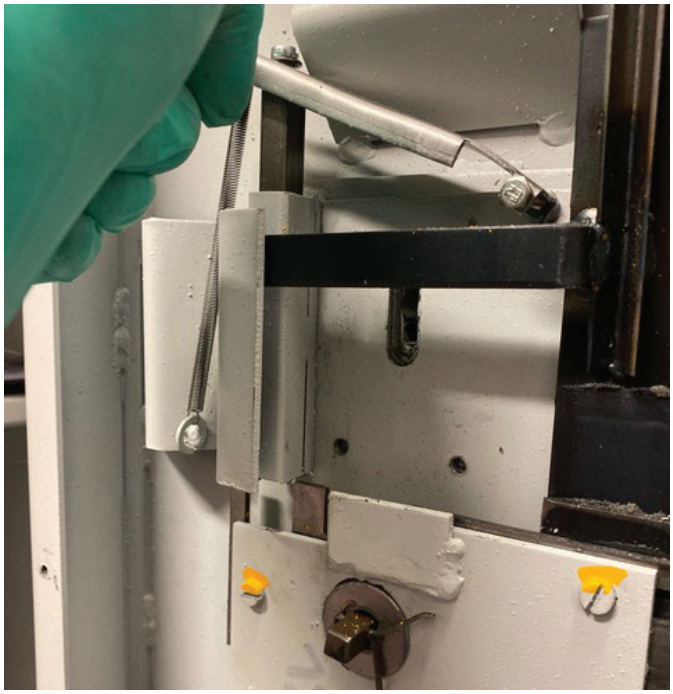


Figure 17. The author is lifting the relock, with protection.

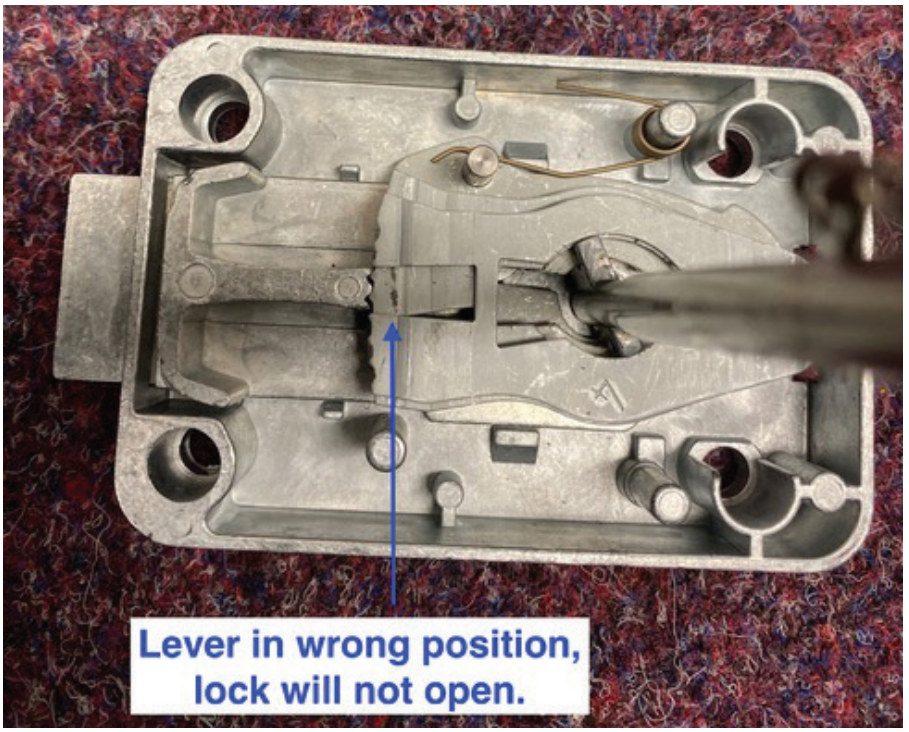


Figure 18. The customer's key is being used, and the lock will not open.

a very low cut, but the number 7 lever is a medium-height cut. This tells me that something is wrong because if the top lever cuts were the same height — for example, the lever numbers 2 and 3 on the key — then the opposing side cuts would be the same height too. Hopefully, this makes some sense to you. I apologize if this is as clear as mud, but I hope the photos will help.

More eagle-eyed readers may have noticed that only the bottom lever in this lock has a lever spring, which is used to bring all the other levers to the rest position. The levers really don't need springs because the key touches both sides of the lever and positions it.

However, this also means that if a piece of a tooth on the key bit breaks off because the levers are not sprung, if you were to turn the safe (well, the lock,

Figure 19. The lock is turned the other way with the customer's key, and it will not open.

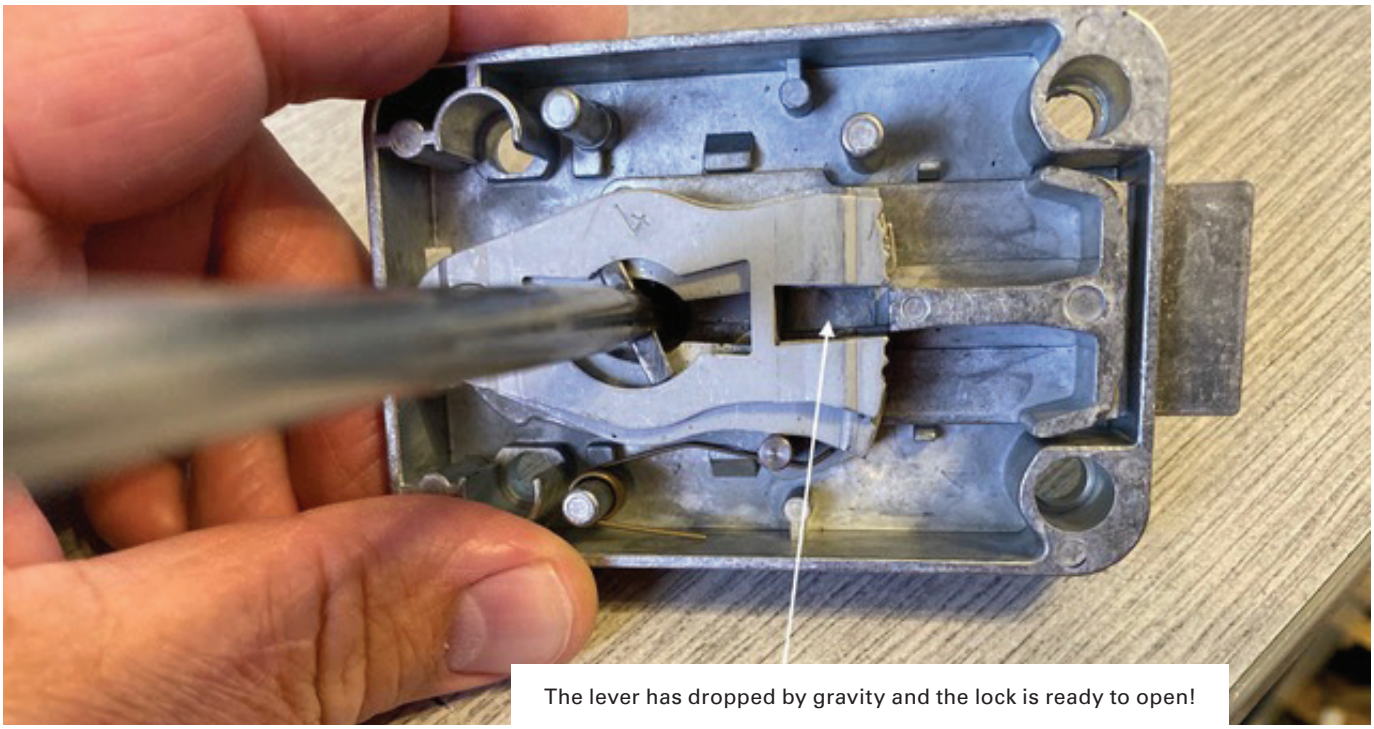


Figure 20. The lock is on its side (and still has the customer's key in it), and it's now ready to open.

actually) onto its side, the lever will often drop by gravity to touch the other side of the key bit and align itself correctly with the bolt stump, allowing the lock to open. Assuming that the explanation is again as clear as mud to you, the photo will hopefully make things more obvious.

Second Time's a Charm

So with the safe open, I have to change the lock. Now I know that you know I never make mistakes (LOL), but once the safe door was open, I immediately threw out the safe-locking bolts. Then I turned, removed the make-up key, removed the key pieces one at a time and carefully put them back in their correct location in the box. You may be able to see my mistake in the photos.

Locking the door bolts out and removing the key places a steel bar directly behind and very close to the two top screws holding the safe lock in position. Although it is possible to remove the screws with a lot of messing around, it is easier to reassemble the safe make-up key and open the safe bolts. This then allows easy removal of the screws. I blame it on the lockdown affecting my brain!

Finally, I removed the lock and put back the make-up key pieces for a second time. I changed the levers in my new lock for the customer's levers in their old lock. I did this, rather than simply replacing the safe lock completely, because STUV has altered its locks. The bolt of the new lock no longer protrudes from the back end of the lock when it is in the open position,

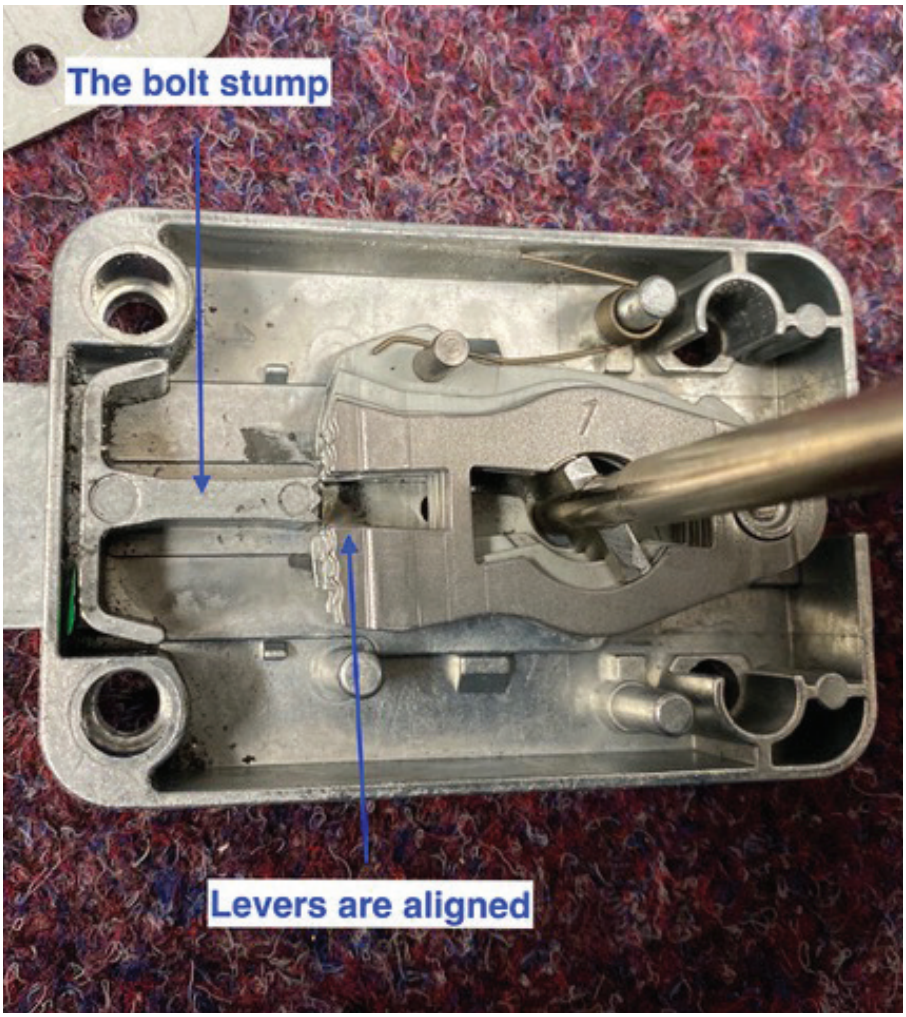


Figure 21. The levers are aligned.

Figure 22. The lock is open.

Figure 23. The levers have been removed.

Know Thy Key

LONG GONE ARE THE DAYS WHEN your vehicle key was a simple machine-cut blade. Just like the vehicles that use them, the modern key is the antithesis of simple. Here's a review of the latest key types.

Flip key or switchblade key so named for its design that enables the bladed key to be folded within its remote fob when not in use and to pop up with a button press. This key contains a transponder programmed to the vehicle to enable the vehicle to start and be driven .

FOBIK stands for "fob integrated key." The FOBIK's square top plugs into the dash to start the ignition. The device also acts as a typical buttoned remote that can open the vehicle door and trunk. An emergency door key is hidden within the device.

Smart/proximity/intelligent keys contains a copper coil that transmits immobilizer and remote information to the vehicle when at a certain distance, unlocking the vehicle and enabling the driver to start the vehicle by a pushbutton. An emergency bladed key inside the fob can be used to open and start the vehicle.

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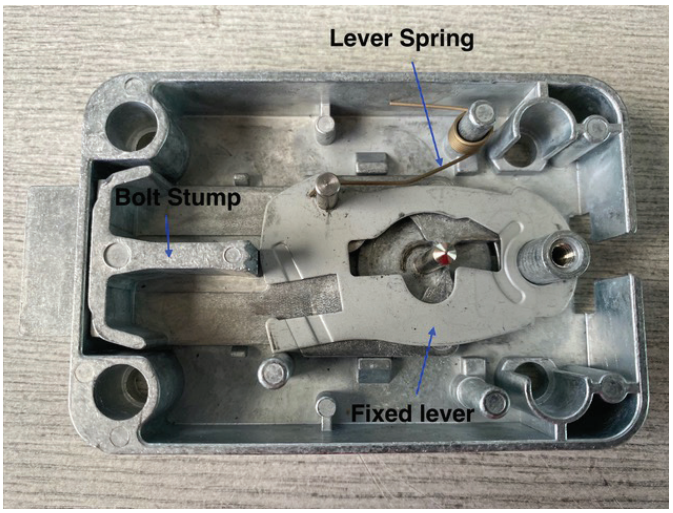

Figure 24. The fixed lever and spring are shown.

Figure 25. The lock is shown with one fixed lever and one variable one.

Figure 26. The new lock is open, but the bolt doesn't stick out of the back.

Figure 27. The new lock is locked.

but the old lock bolt is used to lift the live relock device.

Fortunately, the levers and everything else inside the lock are virtually identical otherwise, so I was able to swap my new levers straight into their old lock with no issues, and the keys worked perfectly. I put the safe back together and tested it several times before I asked the client to come test the safe.

Not So Fast

It may have occurred to you, at this point, that I could have made my life easier by simply assembling the make-up key from the photo before I even set off for the job. You are correct. I could have, but then I would not have been at the customer's premises for very long.

A very quick opening often gives the customers a reason to moan about how quickly I opened up their safe. If I just go in, put in my made-up key and open the safe in about 30 seconds, that's often when arguments about pricing can start. Better to put on a bit of a show, in my opinion, and save the hassle, but you don't have to!

It was time to go out into the big, bad, virus-filled world out there… or maybe I could risk it and call in at a supermarket on the way home to pick up some alcoholic medication. Guinness is good for you, after all — at least that's what it used to say on their advertising. Take it easy out there, people, and look after yourself and your loved ones!

Based in Lancashire, England, **Craig Bernasconi** has been opening, servicing and moving safes since 1978. He specializes in high-security safes and vaults, and he works throughout the U.K.

Free Webinars for IAIL Members

I'm very pleased to announce the first-ever IAIL webinar series premiering this month (February) at a website near you! We've been working to pull this together since the idea was first proposed during our membership meeting at the ALOA Convention last year. The concept is simple but enticing. Our goals are to:

1. Add value for members.
2. Share actual, useful case studies and/or skillsets for lock, safe, hardware or openings forensics.
3. Present information in a short amount of time.
4. Share knowledge from our diverse leaders within the association in addition to having outside, expert, guest speakers who can contribute something fascinating, arcane and useful.
5. Allow our members to gain real-life expertise and continuing education that can earn credits toward the recertification process.
6. Make it free to members!

We're putting the schedule for 2023 together now. We'll have a different "expert witness" every two months. During each hour-long session, you can gain priceless information and learn about real-life situations that may have been challenging or a cakewalk. Either way, there will be something unique and interesting for us to learn from.

The First Webinar

Our first speaker will be Tom Demont, AHC, CFFDI, CFL, CML, CMIL, CMST, IFDI, ICML, LSFDI, ARL. He will share details of his work on a personal injury case involving a young child who lost part of his finger in a restaurant foyer door. Tom will cover the site visit, report generation, code violations and inappropriate hardware choices, and then he'll discuss how the case transpired, all the way to settlement of the case. He'll cover the details of the case, the process of producing the expert witness report and what affected the settlement of the case. It will be exciting to see the process unfold and learn how a forensic locksmith's work can affect the justice system and change lives. Stay tuned for details, but save the date of February 28.

And, sorry, but this event series is only open to members of IAIL. So, if you're not a member, contact me or ALOA to join right away. Don't miss out on a single webinar. (And, yes, we will record them to build a membership reference library for the future!)

"During each hour-long session, you can gain priceless information and learn about real-life situations that may have been challenging or a cakewalk."

For additional forensic education opportunities, keep an eye out for the class registration information for the 2023 ALOA Convention & Security Expo.

Clyde T. Roberson, CML, AHC, CPP, CMST, CFMST, AMKS, President, International Association of Investigative Locksmiths, iailpresident@aloa.org

Get Published!

IAIL members: Submit your articles for the Investigative Spotlight department. Send your information to Tom Demont at thomas@assatechnicalservicesinc.com.

KW1 KWIKSET SMART CYLINDER RESET TOOLS PART 1

In this first installment in this article series, **Rick Karas** explains the tools' operation.

Being in the locksmith industry for many years comes with a few nice perks, including the opportunity to share trade stories and technical information with other locksmiths. Fortunately, I have formed bonds and friendships with many locksmiths over the years. One of my locksmith friends does primarily commercial locksmith work and is employed as an institutional locksmith. Residential locksmith work is not his strong suit, and he really hates dealing with any residential lock.

I was chatting with him about some of my recent jobs. As you probably already know if you have been in this field for a while, we meet interesting people, come across many oddities and end up with some of the most interesting stories about our daily jobs — some of which only other locksmiths could really appreciate and would truly believe. One of the things that he told me was that he had recently been asked by a relative to rekey some house locks. His relative had shown him a Kwikset KW1 key that currently worked the locks on his house, and he figured that it would be a quick job to rekey a few Kwikset locks. Even though he did not care much for residential work, he was familiar with standard Kwikset locks.

It seems that just about every locksmith has something to do with Kwikset locks at some point in their career; there is no escaping them. They are everywhere. He was surprised when he found out that all the locks on the house were KW1 Kwikset SmartKey locks, which he was not familiar with. He told me that he was able to stumble through the process and rekey all the locks except one — it just would not rekey properly. He said, "That damn thing just did not work, and I did not know what to do!" He just kept playing with the key, and then it turned in the cylinder, and he was able to finally reset it. Ultimately, he was able to rekey it with the learn tool, and everything ended up working out just fine.

He asked me if there was anything that he could have done had he not been able to get the cylinder to reset and rekey properly. I told him that I was aware of a few tools that could aid him in resetting the cylinder if something were to go wrong. I got to thinking about my conversation with him and realized that there may be other locksmiths who may not really have had the opportunity to work with the KW1 Kwikset SmartKey — plus those new to the industry who could benefit from the information I had shared with him. Thus, the purpose of this article.

An Introduction

The Kwikset SmartKey has been around for longer than you might think. On February 11, 2008, Kwikset released a press release announcing it. You can find it at this link: http://bit.ly/3kTDQTk. When I first heard about the SmartKey, I wondered whether it might be a flash in the pan. It wasn't, and it looks like it is here to stay. If you do any residential locksmithing, you undoubtedly have run across a Kwikset SmartKey lock. The rekeying process is quite simple in theory.

Here are the steps that I take when rekeying the Kwikset SmartKey lock cylinder.

Figure 1. I like to generously lubricate the cylinder. I have had success using Houdini, but I am sure other lubricants would work well, too; we all have our favorites. Use whatever you are comfortable with.

Figure 2. I like to keep the lock in the locked position and the door open, preferably with my tool bag between the door and doorframe. Insert the key that currently operates the lock into the cylinder **NOTE:** It is very important to make sure that the key goes all the way into the cylinder. I would recommend that you push in on the key during the process to make sure that the key stays fully inserted.

Figure 3. Turn the key ¼ turn clockwise to the 3 o'clock position.

Figure 4. Insert the SmartKey learn tool into the small hole above the cylinder.

Figure 5. Remove the SmartKey learn tool.

Figure 6. Remove the key.

Figure 7. Insert the new key that you would like the lock to operate.

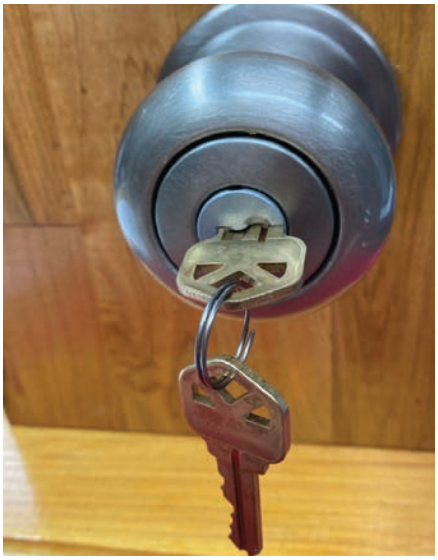

Figure 8. Turn the key counterclockwise 180 degrees to the 9 o'clock position.

Conclusion

The process to rekey a Kwikset SmartKey Cylinder is pretty straightforward and only requires a few moments to perform. In a perfect world, this would be great, but unfortunately, we don't live in a perfect world. I have heard old-timers say, "Sometimes, things don't go as planned. It's called life." I have come to realize that they were right about a lot of things, and especially that.

So, what happens when things don't go as planned and the SmartKey lock does not rekey properly in a real-life situation? What next when neither the old key nor the new key will now work the cylinder? It's good to have a backup plan with one or more options.

In the next installment of this series, I'll cover the SmartKey Security Reset Cradle.

Rick Karas, RL, CFDI, AFDI, started in the locksmith industry in 1983. A licensed locksmith, he has experience with many physical security disciplines, including access control systems, intrusion detection systems and video monitoring systems. He works in both commercial and institutional settings. Rick owns Phil-Rich Lock, which serves the Washington, D.C., metropolitan area.

Figure 9. Turn the key to 12 o'clock and pull the key out of the cylinder. Then test the SmartKey to make sure that it operates properly.

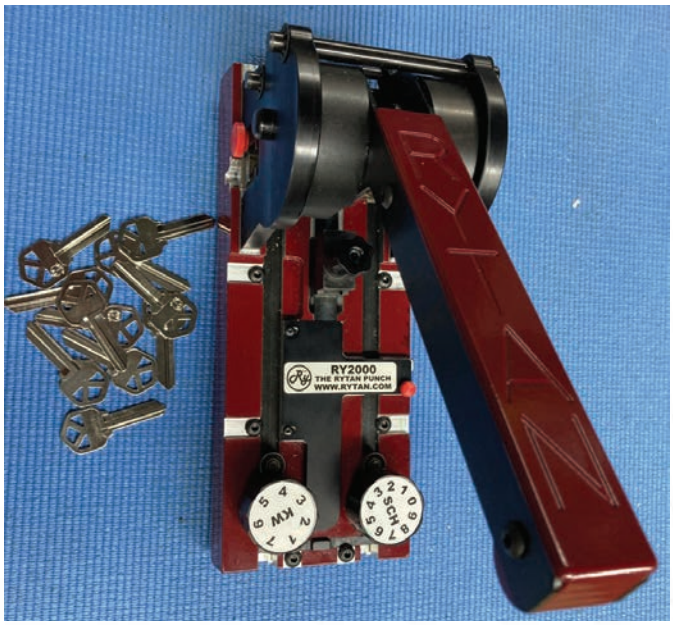

Figure 10. NOTE: It is very important to use Original Kwikset KW1 factory keys or make original keys by code and use them when rekeying the Kwikset KW1 SmartKey Locks. I have experienced problems in the past when I did not. I have experienced no problems when I use my Rytan punch to make keys.

What is ELECTRICITY?

Richard L. Howard, CPL, DHC, DHT, explains how electricity works so you can better understand electronic access control.

It was the ancient Greeks who first observed electricity. As noted in the book *Basic Electricity* by Van Valkenburgh, Nooger and Neville, Inc.: "...when amber (a fossilized resin) was rubbed with a cloth, it would attract bits of material such as dried leaves." Interestingly, it was an American founding father — Benjamin Franklin, whom we all know for his truly brilliant and study-worthy kite experiment — who coined the terms "positive" (the red wire in low-voltage DC work) and "negative" (the black wire in low-voltage DC work). He also used the term "battery" when experimenting with Leyden jars (see *Figure 1*). These glass jars produced electrical circuits by using an external high-voltage electric charge between electrical conductors on the inside and outside of the jars.

The experiments with Leyden jars were the basis for his conclusions about lightning, noting how they were inherently the same as his Leyden jar observations. Franklin also observed the phenomenon of how opposite charges attract and like charges repel each other, that the conservation of charge is a law of nature. All this occurred more than two decades before the American Revolution and 150 years before the discovery of the electron.

Regarding the electron, it is the construct used that allows us to understand electricity and predict electricity's behavior. The study of low-voltage (below 50V, according to the National Electrical Code) hardware and its successful implementation in your application is based on a basic understanding of electron theory. This article will provide an introductory understanding of electrons and help you understand why electricity behaves as it does.

Purpose of Electrified Hardware

Electrified hardware allows the user to enjoy functionality that may not be otherwise provided. Perhaps you need to allow hundreds of people to access a door, but handing out mechanical keys is impractical. Maybe you need an audit trail of who entered the door and when. Perhaps you need the ability to remotely control rights and privileges over an opening. There are countless ways electrified hardware serves the needs of the user and does so in ways mechanical hardware simply cannot. In fact, the more you study the owner's requirements for functionality of an opening, you'll usually find multiple ways that electrified hardware can accommodate these needs.

What Is Electricity?

In this section, I'll attempt to explain how electricity behaves. I'll frame this article using Ohm's law, which is expressed as E=IxR. Ohm's law is used constantly in low-voltage access control work to determine many things in a circuit, such as suitability of the chosen power supply or for understanding the relationship between voltage and current flow. Ohm's law just happens to be a handy way to construct the "flow" of writing this article. Following E=IxR seems an elegant way to speak about how electricity flows through a circuit. In the spirit of Ohm's law, let's start with the "E" in E=IxR and a little bit of background information.

Electricity is the movement of electrons through a conductor. Electrons flow because of attraction. Like poles — or charges — repel, and opposite poles — or charges — attract. This means electrons (which are negatively charged and therefore repelled by other electrons) flow through a conductor toward positive charges. In other words, electrons will always flow toward a place deficient in electrons (as that area carries a net positive charge). Now that we know what is happening inside the conductor, what impels these electrons to flow? To explain this, we need a power source.

Power Sources and Energy

A battery — a power source — made of special metals and chemicals can cause electrons to flow. The act of touching a wire to its two terminals will impel electrons to flow. These electrons will flow as the negatively charged electrons will now move toward the terminal that has a net positive charge. It's the interaction of these special metals and chemicals inside the battery that has the byproduct of exciting electrons to move. The flow of this movement, as defined earlier, is away from negative charges toward positive charges (aka, an area deficient in negative charge). But how does this work? As we said just now, it's the special metals and chemicals at work. But the underlying cause is the amount or value of "potential" between the negative and positive terminals (just envision a battery with the (-) and (+) symbols, as these are the terminals). The new term is "potential." If you lift a case of locksets from the floor up 1½' and you hold them there, there is now "potential" energy.

I like to think of the potential between different voltages by thinking of the following analogy: For an AAA 1.5V battery — such as one used in a computer mouse — I hold that case of locksets 1½' above the ground. To compare that potential to a greater potential like that of a 12V battery — such as one used in a car — I imagine holding that case of locksets 12' above the ground. In this mental example, I don't drop the locksets,

Figure 1. This is an example of a Leyden jar.

but use this mental picture to visualize and explain this term potential and the huge potential difference between 1.5V and 12V. The student will always imagine the crash of locksets to the floor released from 1½' and how much greater that crash is when the locksets are held and released from 12' in the air. No science backs this analogy, and it's simply a way to better grapple with understanding "potential."

In the battery, there's also "potential" energy. Potential is the difference between the value of the (-) and (+) charges at the terminals and "how much" difference there is. It's the conversion of this potential energy to another form of energy that impels

"The dangerous part of the circuit is the amperage, and with a high enough voltage, you will have a circuit that can be dangerous or even deadly."

electrons to flow. Consider the example of a wire connected from a terminal on the (-) battery to a lightbulb and back to the other terminal (+), which will cause the lightbulb to illuminate. To speak technically, we are transforming "potential" energy into an electron moving force, or "electromotive force," known as "EMF."

And herein lies our first breakthrough: The "potential" energy, or EMF, is measured in voltage. Named after Alessandro Volta (1745-1827), voltage is our first of three key components in understanding what electricity is, and this is the "E" in Ohm's law. "E" can also be expressed as "V," but "E" represents electromotive force, whereas "V" represents a scientist's last name. Therefore, we'll refer to voltage as "E." (Another example would be $E=mc^2$, where "E" stands for "energy" and does *not* stand for Einstein=mc^2).

We can prove this by applying the probes of our volt meter on each of the terminals of a battery. The readout/display of the voltmeter will tell us how many volts the battery is producing, and therefore we'll know how much "potential" energy the battery contains. Sticking your tongue on the terminals of a 9V battery will also give you an idea of the "potential" contained in the battery — or, at a minimum, whether or not the battery is "dead."

Flow of Electrons

There are many ways to impel electrons to flow. In our work, we impel electrons to flow in our low-voltage circuit by connecting our loads and switches, via the conductors to our power supply. This is done via power supplies (DC), transformers (AC) or batteries (DC). There are several additional ways to create power, such as friction, light, pressure, heat, chemicals and magnetism (magnetism, how transformers work, plays a large role in access control). But this knowledge is not required for our purposes.

Whenever a force of any kind causes motion, work is done, as stated in *Basic Electricity.* As an aside, the potential energy (measured in voltage) between the battery terminals is "work" when converted to EMF. Work is measured in watts, which is the rate work is done in an electrical circuit. To define watt further, 1 watt = 1 amp of current flowing as a result of applying 1 volt of potential energy.

So long as there is continuous potential energy being converted to EMF, current will continuously flow. The quantity of voltage (potential difference) supplied defines the resulting electrical profile of the circuit. This can be understood by reintroducing the formula E=IxR. Voltage is the "E" component. Recalling basic algebra, when the value of "E" changes, so will the values of "I" and "R." Basic algebra tells us that when voltage is increased, the greater the amount of current may flow — because "I" and 'R," yet to be defined, must also increase in some type of relationship between each other.

It's timely to mention here the requirement that all components (the power supply, loads and switches) be rated at the same voltage. The conductor must also be rated to handle the current flow). If you have components in your circuit rated at something other than the supplied voltage, the mismatched component will contend with too much or too little voltage or amperage, and the circuit won't work as anticipated. Said another way, supplying 24V to a 12V load will cause damage or at least a severe shortening of the life expectancy of the component. Supplying 12V to a 24V load will not permit the load to work correctly, if at all. As stated in *Basic Electricity*, "The value of the voltage determines how much current will flow."

Many pieces of equipment we use in access control are measured in milliamps, also known as 1/1000 of an amp. A Von Duprin 6210 requires 333 milliamps, or .333 of an amp to work at 24VDC. (The 12VDC version requires 600 milliamps or .600 of an amp. Studying E=IxR helps understand why lower voltages result in higher amperages.

The "I"

I have often heard the saying "It's not the volts that will kill you." This saying allows us to bring into our conversation the "I" in the E=IxR formula. As we know, "E" is voltage and voltage can be thought of as the amount of "push" that exists in a circuit. Having "push" is a required component in an electrical circuit, but without something to push, there is not much that the "push" can accomplish. What the voltage — or push — needs is something to push, and that is the "I" in the formula (also known as amperage, or current). If you have lots of push (voltage) and little current (amperage) to push, you will not have an effective circuit. If a fictional circuit had a million

volts but practically zero amps, there would be practically zero current. The dangerous part of the circuit is the amperage, and with a high enough voltage, you will have a circuit that can be dangerous or even deadly.

To prove this point, I have read that static electricity (think dragging your feet across the carpet and then touching a metal object in the middle of winter) can generate thousands of volts. But because there is practically zero amperage —therefore practically zero current, the effect is practically zero. Conversely, a car battery at a mere 12VDC has a small amount of "push." But when rated at 500 amps, under particular circumstances, it can certainly make you aware of the current, or worse. (Google "Vaporizing a Nail with a Car Battery.") Think about how E=IxR works, and you can understand how a large "E" with a small amount of "I" is very different than a small amount of "E" and a large amount of "I."

Resistance

As we have discussed, voltage is the potential difference of energy, and without a force, electrons will not flow. If we focus on this concept — that "electrons will not flow" without a force — it's a logical leap to conclude there must be something that stops that flow from happening. What is it? Current will only flow when there is a force that impels it to do so. When that force is removed, the current flow stops. What is the nature of this phenomenon that holds onto the electrons? This is the final component to explain in electricity, and that is the new term, "resistance." This leads us to the "R" in the formula E=IxR. "R" can be thought of as resistance and is measured in ohms. Ohm's law, named after German physicist Georg Ohm (1789-1854), is the name of our indispensable formula, E=IxR.

Resistance varies for different materials. Said another way, an item's ability to "conduct" is equal to how readily electrons can flow through it. Also related is the size (diameter) of the conductor, as a thicker conductor will provide more free electrons. In fact, resistance is proportional to diameter. A conductor's diameter will have a specific resistance at a specific length. If you double the diameter and keep the length constant, you will halve the resistance. Resistance is also proportional to a conductor's length. The resistance value of a 50' length of conductor is exactly half the resistance of a 100' length of the same diameter conductor. In our work, we deal with copper wire, as copper is a very good conductor. Resistance can be thought of as a conductor's reluctance to permit free-flowing electrons.

We can put together a working mental model of all three components in Ohm's law by agreeing that voltage (E) and its ability to push current (I) is based on the conductor's resistance (R) to allow the current to flow. As resistance goes up, amperage goes down. Conversely when amperage increases, resistance must decrease. This fact rests on the principle that "I" and "R" are proportional to each other, assuming voltage remains the same. Again, from Basic Electricity: "Current flow is caused by the voltage between two points and is limited by the resistance between two points."

Summary

In summary:

The basic unit of voltage is the "volt."

- measured in "volts," or "V"
- is the "E" in our formula
- is the electromotive force that is equal to the charge difference between (-) and (+)
- is equal to 1 joule per 1 coulomb

The basic unit of current is the "amp"

- measured in "amps" or "A"
- is the "I" in our formula
- is the amount of current (free electrons) that flows through a conductor from (-) towards (+)
- is equal to 1 coulomb flowing in 1 second

The basic unit of resistance is the "ohm"

- is measured in "ohms" or 'Ω'
- is the "R" in our formula
- is a conductor's nature to inhibit current or free electron flow
- is equal to 1 amp flowing from 1 volt

The direct relationship between voltage, current and resistance is absolute and immutable, and E=IxR, or just E=IR, can be equal to 1=1x1 because when 1 V causes 1 A of current flow, the resistance is 1Ω but can also be expressed as R=E/I or I=E/R.

May your work in electrified hardware be rewarding and profitable. Know that learning to master low-voltage work will set you apart from those you compete against who are not able to offer the same service. Finally, for further study, I suggest the book Basic Electricity by Van Valkenburgh and subscribing to Jim Pytel's YouTube channel "bigbadtech."

Richard Howard, AAADM, CFDAI, CPL, DHC, DHT, ICPL, IQP, has 30-plus years industry experience working in distribution specializing in hollow metal, wood doors and commercial hardware. An active member of both ALOA and DHI, he enjoys the ever-changing and challenging field of locksmithing.

SOMETIMES, CRIME PAYS — FOR LOCKSMITHS

Unfortunately, burglaries are sometimes good for business. **By Greg Perry, CML, CPS**

The bad news is there are people who want to steal stuff, but the good news is that we have jobs in part because of them. One Saturday morning, I received a call to see if I could secure a couple doors after an attempted break-in at two stores next door to each other. Always up for a challenge, I headed out. I was able to bend one of the doors back and replaced a latch guard on it, but the mortise lock was too damaged to work properly. They also really needed a new door for one of them. I was able to get it working well enough to secure the door, and they said they would have corporate maintenance replace the door.

The door still needed to be bent back into shape to be able to reinstall the lock. I grabbed a piece of sheet metal to try to cover the bent and damaged outer skin. The strike was a little more of a challenge, but it surprisingly came back into shape. The door functioned OK, but the mortise lock case was bent with a pry bar by the burglar, so it was marginal. I didn't

Figure 1. The burglar did a number on the door. The author forgot to take a picture of the door before he started.

Figure 2. A piece of steel tub was used along with a couple of C-clamps to straighten the door. A hammer added assistance to the clamp. In some cases, you may need to work inside the mortise pocket to reform the door.

Figure 3. The door looks better and accepted the mortise lock case, but the integrity of the door was severely compromised. Keep in mind that these are temporary repairs until a new door and frame can be procured and installed. Functional is more important than pretty.

Figure 4. The mortise lock is reinstalled and functions. It is far from perfect, but works.

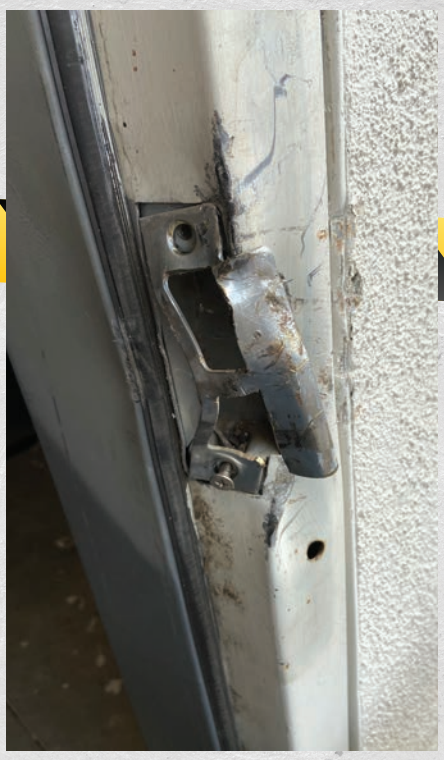

Figure 5. The strike received even more damage. This side was more difficult to repair adequately.

Figure 6. The problem with the strike side is that it is difficult to get behind it or inside the frame without removing the frame. The author bent it back with a prybar and locking pliers. Again, this only needed to work until it could be repaired.

Figure 7. It might not look pretty on the face, but the strike is sitting in the correct location to secure the door.

Figure 8. A cover plate made of sheet metal plus a latch guard covered up all the damage.

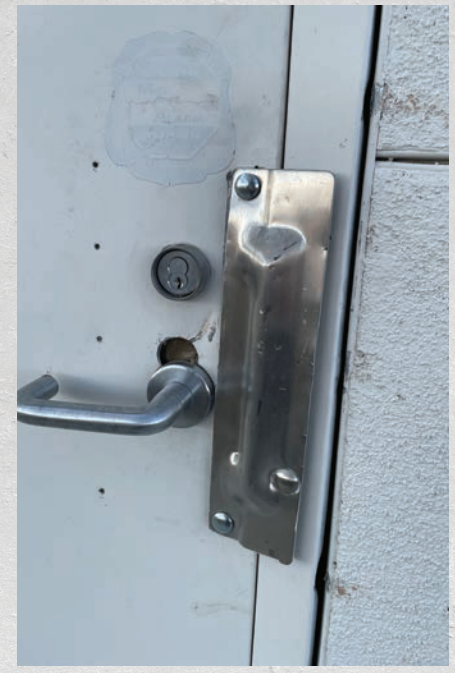

Figure 9. The second door had some additional holes in the door, including an extra hole between the cylinder and the trim. The outside shows some damage, but it was not bad enough to require immediate repair.

Figure 10. The inside also had a few extra holes.

Figure 11. The addition of a wraparound plate left very little room between the door and the jamb.

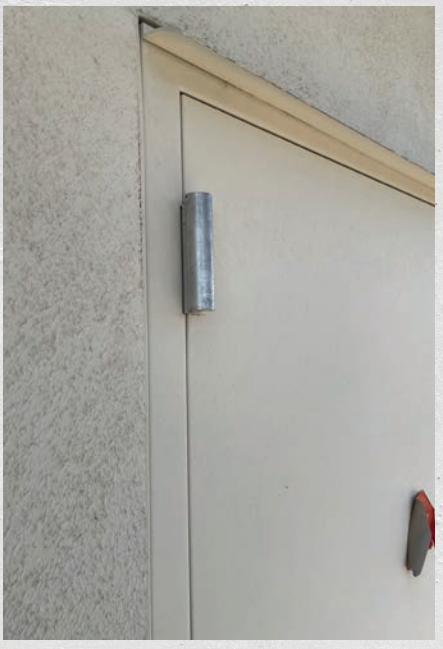

Figure 12. The author used a hinge doctor to move the door over and to make it tighter on the hinge side. Normally, these are used to bend the top hinge a little to bring the door back. In this case, it was used on all three hinges to move the entire door over.

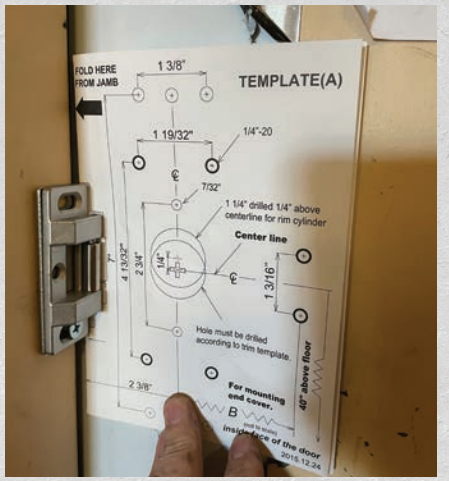

Figure 13. The strike was installed using the bottom screw hole left by the previous installer. Next, the author taped the template to the door and the cylinder hole, and one mounting screw hole was drilled.

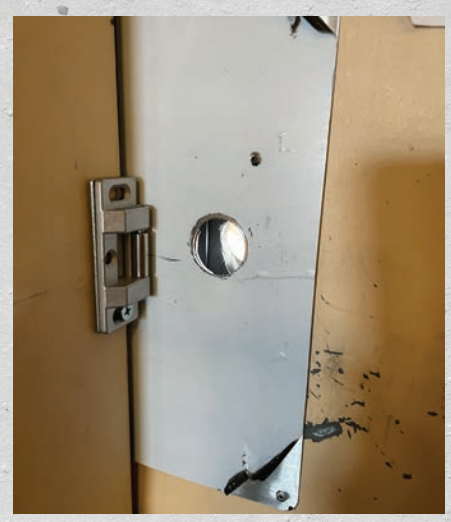

Figure 14. The author's preference is to only drill a single screw hole to ensure proper alignment with the strike and the cylinder hole.

Figure 15. Now that the cylinder hole and one screw hole to mount the device are drilled, the plastic protective film can be removed.

Figure 16. The rim cylinder was installed, and the panic bar mounted with the single screw. Once operation was tested, the second screw in the strike was installed.

Figure 17. The rest of the center case holes were drilled, and the screws for it were installed.

Figure 18. The cover is installed, and one last operation test was conducted to ensure nothing had moved.

have another lock case, so I beat it back to flatten it out. Once it was reinstalled in the door, it worked better, but it still needed to be replaced along with the door and frame.

The Other Store

The second store's door was not that bad. The customer decided they didn't need it repaired. A few months later, an NSP called asking if I could repair the door. After talking with the manager, it was determined they rarely used the rear door; it was just an emergency exit. They obtained permission from corporate to have me install a panic bar and save the cost of a new mortise lock. But the regional manager really wanted the ability to open the door with a key in case the front door had a problem.

The door had some holes that appeared to be from someone starting to install a different lock and plates. I asked the customer, and apparently another locksmith started to install an exit device about a year prior but never came back to finish the job. I installed

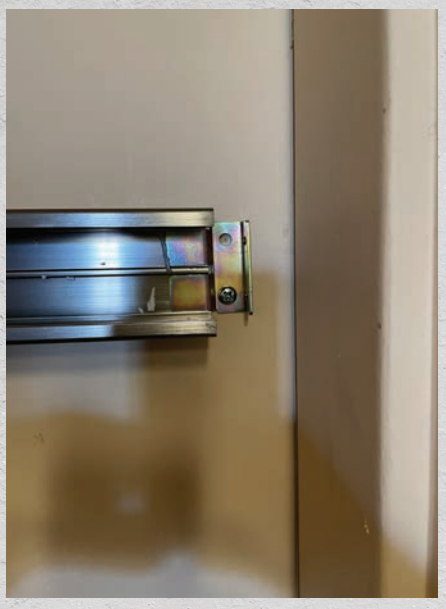

Figure 19. The end cap bracket screws need to be drilled. Use a level, but also look at the door and frame. Close the door and make sure it looks correct. It is rare, but sometimes it looks better to be a little off level if the jamb is off of plumb.

Figure 20. The inside looks good.

Figure 21. The door was caved in a little from the attempted break-in. I debated trying to cave in the plate or bend it back out from the inside but decided it was not bad enough to worry about. The cylinder is protected with a hard collar typically used with mortise cylinders. This provides better protection than the typical sheet-metal trim ring included with rim cylinders.

Figure 22. The outside of the door had a line of screws that were not covered by the plate. Sheet metal screws were installed to fill the holes.

Figure 23. The wraparound plate covers the mortise pocket and provides a nice finished door edge.

a blank wraparound plate to cover the existing lock prep and provide a "stiffener" for the door. Then I installed a rim exit device with a cylinder but no pull. This provided the customer with a way in if needed in case the front door lock failed.

Although I don't like burglars, they do create work for us. Being prepared and available to repair damaged doors on a moment's notice is a skill for every locksmith.

Greg Perry, CML, CPS, is a certified master locksmith and certified professional safe technician, working in all phases of locksmithing. He has taught various locksmith topics for 10 years. He currently works in the public sector as a locksmith. He has worked in the hardware industry since 1975 in wholesale, retail and institutional settings. He has written extensively for locksmith magazines and is a five-time *Keynotes* Author of the Year. *Any opinions expressed by Greg in his articles are his alone and do not reflect any official government position.*

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SCHOLARSHIP APPLICATION

Name_____ PRP/STPRP Level_____ ALOA/SAVTA# _____

Home Address_____ City _____ State_____Zip _____

Home Phone _____ Work Phone_____ D.O.B. _____/_____/ _____

Fax_____ Email _____

Employer _____ Supervisor's Name_____

Work Address _____ City _____ State_____Zip _____

Position _____ ❑ Full Time ❑ Part Time Take Home Pay _____per_____

Educational Level _____(years) Degree/Certification (if any) _____

Previous Recipient? ❑ No ❑ Yes Date_____ Location_____

Length of Time in Locksmithing _____ (years) Membership in Trade Associations (list by name)_____

_____

Marital Status _____Number of Dependents_____Annual Household Adjusted Gross Income_____

Classes Desired _____ Date of Classes _____

Organization Sponsoring Classes: ❑ ALOA ❑ SAVTA Other_____ Location _____

If granted an ASF Scholarship, will you be able to pay for your own air travel/transportation and hotel accommodations? ❑ Yes ❑ No

If no, please explain (use another sheet if necessary): _____

ALOA Scholarship Foundation (ASF) scholarships are granted to individuals desirous of entering the locksmithing field or to individuals already in the industry who wish to improve their professional skills. ASF shall review applications on an objective and nondiscriminatory basis and shall hold all information pertaining to the applicant's financial status and background in strict confidence.

Include with this form your most recent **federal tax return** and a letter stating your financial situation, your reason for applying, what you plan to do with your training, and any other information you feel may be helpful to ASF when reviewing your application. Attach three (3) letters of reference from individuals who have knowledge of your background and character. Each letter should contain the author's name, address, email address and contact number. One reference must be from someone in the locksmith industry. It is helpful if the person is an ALOA or SAVTA member. Applicants are required to provide a 3" x 5" photo.

APPLICATION CHECKLIST

Only COMPLETE applications will be considered by ASF. Applications must be received by the following deadlines, or an application cannot be considered for review: **75 days prior SAVTA and ALOA conventions; 40 days prior to the non-convention classes.**

❑ I have legibly completed each field on this application.
❑ I have written and enclosed a letter explaining my reasons for applying.
❑ I have enclosed 3 letters of reference (1 reference must be from someone in the locksmith industry).
❑ I am submitting my application according to the deadlines listed above.
❑ I have enclosed a 3" x 5" photo.
❑ I have enclosed a copy of my most recent tax return and financial situation letter.

CERTIFICATION OF APPLICANT

I certify that the information contained herein, and all other submitted forms, are correct to the best of my knowledge. I further certify that if I am selected for a scholarship, I will use my training for the advancement of the locksmithing profession. I also agree to provide additional proof of the information I have submitted as may be requested by ASF. I understand that if I choose not to provide said proof that I may not receive a scholarship. I understand this application is valid only for the event/class specified and is not transferable. I understand that I may be subject to a background check as per ASF guidelines.

As a potential recipient for the purpose of receiving training, and as a condition of accepting this scholarship should it be awarded to me, I agree that I may be held liable for the full amount of the scholarship should I fail to complete the training for which the award has been issued without at least 30 days' notice or an excused absence granted by the ASF. Any reimbursement obligations shall be at the sole discretion of ASF.

Should an emergency occur immediately prior to or during the training period that affects my attendance or completion of the training, I understand that it is my responsibility to contact the ALOA Educational Director to plan the completion of the training or obtain an excused absence, or I may be liable for the reimbursement of the scholarship.

Signature_____ Date _____

Please send all completed applications to The ALOA Scholarship Foundation at the address at the top of the page. **Revised 12/2022**

THE COURT IS NOT IN SESSION

Bryan Kruysman, CML, electrifies courtroom doors in Puerto Rico.

Sometimes, work and play mix. This job was one of those times. For about two years, I had been in contact with the Caribbean territory of a worldwide integrator about the U.S. Courthouse in San Juan, Puerto Rico. I was being asked to do the electrification of the courtroom doors. If you remember, about six years ago, the power grid for Puerto Rico suffered a major failure following hurricane Irma. The courtroom doors were all on mag locks, and that was a security problem. My job was to make the doors fail secure.

The problem was that the doors were not standard doors. Not only did they have an offset on the doors themselves, but there was also an offset to the jamb so that they had a step to them, if you will — sort of like the safe doors of old, except this was done for different reasons. It was to help make the doors more sound-resistant. The locks were approximately 1970s-era Sargent Knobs. The building itself was

Figure 1. These are the lock and door before the conversion to electric locks. You can see the boot leg or offset on the door.

Figure 2. Here is the inside trim before conversion.

Figure 3. This image provides a full pre-conversion view of the door with the mag lock that needed to go away.

Figure 4. Here's something you don't want to see: the inside of the courtroom.

Figure 5. This is the door that had a window. Well, it used to be a window, but for core drilling, it was just like a window. The author had to go up and over at top of door, then back down to hinge transfer.

Figure 6. The author's tools by door were shipped interoffice to this job.

Figure 7. Here is the basement of courthouse where the author took one door to core drill up and over.

Figure 8. One of the contestants in the Miss World competition (who came in second runner-up) was nice enough to pose with the author's wife.

Figure 9. Here is the finished product, looking nice and working perfectly.

Figure 10. You can see the finished product from inside the courtroom. The existing Medeco cylinders were reused.

Figure 11. Here's the finished product from the hallway side.

Figure 12. This is the author's practice door with the bullseye tool.

designed in 1914 in Spanish Colonial Revival style and was listed on the National Register of Historic Places in 1986.

The integrator had tried to install an electric strike previously, and it didn't come out very well. The decision was made to move on to electric locks. Decisions like this are not made lightly or quickly; anyone working for the government or its contractors knows this. To install electric locks, the doors needed to be core drilled. Part of my certification training for core drilling doors was that you should not drill "sound proof doors." Not my term —I personally hate anything that uses the word "proof," as nothing is "proof." It's an absolute that is not reachable. If it's man-made, it can be man defeated.

I suppose there are many reasons for sound-proofing a door in a courtroom. Anything overheard by a jury could influence them, plus there's just the noise factor. I informed the integrator of the risk factors and what could happen with the unknown variables. They wanted to proceed. Always cover your butt.

Getting Approvals

The devil is in the details to do a trip like this. I wanted everything to be covered cost wise. I did not get everything, but I did get most. Airfare for one but not my wife — agreeable. Hotel: not five stars but a solid four — agreed. Meal allowance: $74 per day — agreed (but I did spend a bit more than that). Rental car: not a Lincoln, but it did run well — agreed. Material and tools shipped inter-office so I didn't have to lug them around — agreed. They also had host of supporting cast to take care of all the other issues like changing the system from fail safe to fail secure, rewiring the door to the hinge from the header, a carpenter (who actually never showed) and the annoying vacuum guy who was always under foot. My job was to core drill the doors, and install new electric locks and electric hinges; everything else was on them. One big kicker to the job was that we could not start work until 6 p.m.

Working at night was not too bad the first few days, but it soon caught up to me because my wife wanted to enjoy tourist things during the day. I worked from 6 p.m. until 2 a.m., then played from 10 a.m. until time to get ready for work. To make things more interesting, the hotel was hosting the Miss World contestants. When we were going to lunch at the hotel, 10 beautiful women asked if they could squeeze in the elevator with us. It was a

Figure 13. Here is another view of the bullseye tool.

hard decision, but I let them decide if they could. (Again, cover your butt.)

How It Went

I found most of the doors easy to core drill. I believe — but am not certain — that some doors had been replaced with standard, non-sound-proof doors. These drilled easily, and the first three courtrooms went well. The last courtroom was a bit more difficult. The drill rig I was using started to make a high-pitched squealing sound when it approached the center of door. I can only speculate as to what was inside, but it made drilling much harder and made my end location off by a bit.

The last door had a long window that ran in front of the lock. This made a straight shot to the hinge out of the question. Instead, I removed the door and brought it to the basement for better access to all sides. The plan was to drill straight down from top of the door to the lock, then across the door and down to the middle hinge. It was not the easiest way, but it was all I had. There were some places that needed to be repaired by the carpenter where it was necessary to break the skin of the door. I put a bit of wood filler in and left that to him (if he ever showed up).

"The decision was made to move on to electric locks. Decisions like this are not made lightly or quickly; anyone working for the government or its contractors knows this."

The tourist thing was awesome, with much history to be viewed and plenty of restaurants, complete with an abundance of flavor. A few words of warning: Stay with the name-brand spirts if you drink; don't let them choose. You will regret it as you pray to the porcelain gods. Also, plantain is kind of like a cooked banana and is a staple in Puerto Rico. You might come to loathe it after eating it so much.

Don't be afraid of traveling to jobs like these, as they are fun and exciting. Get out of your comfort zone and try something new. Just don't try the cheap rum.

Bryan Kruysman, CML, started working on safes and locks in 1974 for his father. He purchased Suncoast Safe and Lock in Sarasota, FL, in 1991, and moved to his present location in Venice, FL, in 2006.

Hot Stuff and Such

Take a look at some BEST hacks, how to deal with red thread locker and more. **By Tony Wiersielis, CPL, CFDI**

It's been freezing around here lately. It was 9 degrees when I got to my little shop at the college recently. I brewed a cup of coffee, had a few sips to help me warm up and put it down on the bench while I worked. *Figure 1* shows me using my wire stripper to cut an 8-32 screw. *Figure 2* shows where the end of it wound up after it shot out of the cutter and flew about a foot. That kind of set the tone for the rest of that day.

Huge School and a Couple of BEST Hacks

Recently I spent a week working in Alexandria, VA, installing BEST cores at a gigantic parochial high school. The school

Figure 1

Figure 2

Figures 1 and 2. The author used a wire stripper to cut an 8-32 screw (*Figure 1*), but the end of it wound up somewhere unfortunate after it shot out of the cutter (*Figure 2*).


Figure 3

Figure 4

Figure 5

Figures 3-5. A high school had a very old BEST cylindrical deadlatch with a thumbturn.

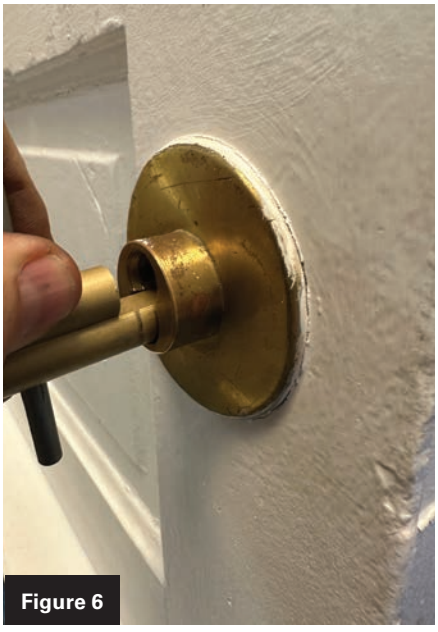
Figure 6


Figure 7

Figure 8

Figures 6-8. Here's another older-design BEST deadbolt in an office in the school.

goes back to the 1800s, with some vintage buildings mixed in with all the newer ones. *Figures 3-5* show a really old BEST cylindrical deadlatch with a thumbturn. *Figures 6-8* show a different design BEST deadbolt in an office down the hall.

When we were working in one of the dorms, we started noticing that a lot of the non-student rooms had six-pin cylinders in them. We were replacing six-pin cores with seven-pin ones, and they didn't fit into those existing cylinders. We wound up bypassing those doors and marking them down on the schedule for future conversion to seven-pin cylinders. All of the old cores were six-pin, but most of the locks and cylinders were seven-pin.

One of us handled the schedule mark-offs and the cores, and several of us leap-frogged each other door to door, taking old cores out and putting new cores in. It's hard to tell the depth of the cylinder by eye, and putting in a core only to find it didn't fit was a waste of time.

Figures 9 and 10. These images show how the author and his team measured the depth.

Figure 11. This is a six-pin throw member.

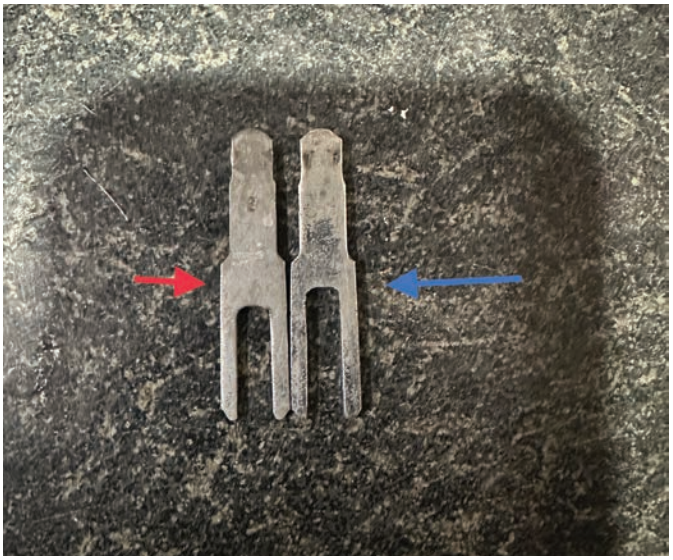

Figure 12. The modified throw member is on the right, and an unmodified one is on the left.

Figure 13. The author is using a Milwaukee 12-volt 3" cutoff tool to convert a six-pin throw member to a seven-pin version.

Figure 9 shows how we sped things up. Notice the Sharpie mark on the cylinder wrench and how close it is to the face of the cylinder; that's a seven-pin cylinder. In *Figure 10*, you can see the mark is further away from the face; that's a six-pin cylinder. As we went down the halls, we'd call out the room numbers to the guy with the schedule and re-install the old core.

The second hack at this school deals with BEST 9K cylindrical locks. With these, you can use six- or seven-pin cores, but you need the correct "throw member" for it to work in the lock. *Figure 11* shows me holding a six-pin throw member; you might just be able to see the small "6" stamped on it. *Figure 12* shows a modified throw member to the right of an unmodified one.

Here's how this works: A six-pin core is shorter than a seven-pin one, so the throw member is longer for it to reach the internal parts it turns in the lock. If you use a six-pin throw member on a seven-pin core, it won't go all the way into a 9K lock because now it's too long. We were faced with a lot of six-pin members that we couldn't use.

Fortunately, we all had some seven-pin throw members stashed away, but toward

Figure 14. Here's some paper clip sabotage you wouldn't expect at a high-end school.

Figure 15. The author never figured out why so many of these on dorm rooms were crooked.

the end of the job, we had used them all up. However, we had plenty of the old six-pin members. In *Figure 13*, I'm using my Milwaukee 12-volt 3" cutoff tool to deepen the opening between the two legs of the throw member to turn it into a seven-pin version. By doing so, the throw member fits deeper into the core and projects out less, thereby solving the length problem.

It turned out that I didn't have to do too many of them, and we have the seven-pin types on the way to replenish our stashes. Hopefully, you'll never have to do what I had to do, but at least now you know what to do if you get stuck. By the way, you might call them tailpieces, but "throw member" is BEST's nomenclature for those parts. Also, if you look at a BEST mortise cylinder at the two pins the core fits over, those are called "throw pins."

Here are a few more interesting things about this school. *Figure 14* shows some paper clip sabotage you wouldn't expect at a high-end school. *Figure 15* is a mystery. Most of these were on the dorm rooms, and we couldn't figure out why they were all crooked. They seemed to work fine.


Figure 16

Figure 17

Figures 16 and 17. Just for fun, here is a small part of the collection of old cameras in the photography classroom.


Figure 18


Figure 19

Figures 18 and 19. A PHI intruder function panic device is shown in the locked and unlocked positions.

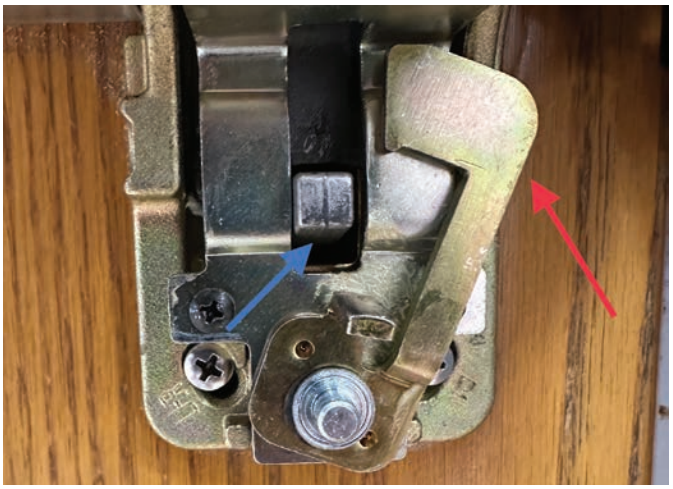

Figure 20. You can see how the internal parts on the head of the panic bar lock the outside trim.

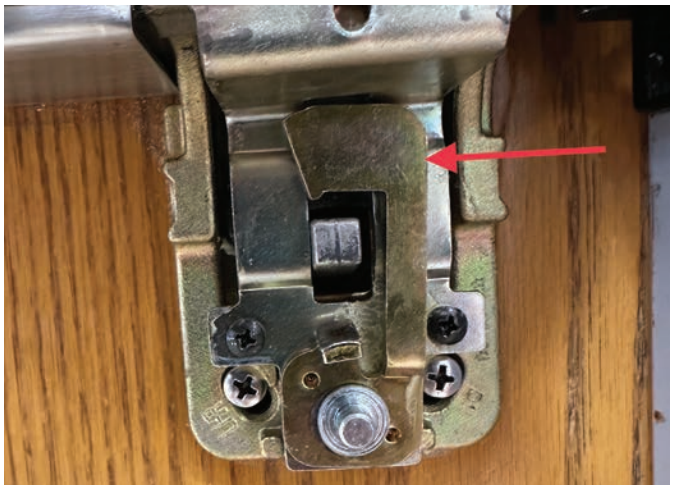

Figure 21. The part that moves over the finger lift to prevent it from moving upward is in the locked position.

Figures 16 and 17 were in the photography classroom, and what you see is a small part of a vast collection of old cameras.

The Hot Stuff

Figures 18 and 19 show a PHI intruder function panic device in the locked and unlocked position. The thumbturn locks and unlocks the outside trim. In the event of a lockdown, anyone, including students, can lock down a room. This is a variation of the usual setup in which the thumbturn is replaced with a keyed cylinder and only school personnel have the keys to use it.

Figure 20 shows how the internal parts on the head of the panic bar lock the outside trim. The blue arrow points to the "finger lift" on the outside trim that projects through the door and partway through the head of the bar. It moves upward when the lever is pushed down, and the latch retracts to open the door. The red arrow points to the part that moves over the finger lift to prevent it from moving upward and withdrawing the latch. *Figure 21* shows that part in the locked position over the finger lift.

Figures 22 and 23 show the thumbturn unit that locks the bar and how the indicator moves from side to side. This unit

Figures 22 and 23. Here, you can see the thumbturn unit that locks the bar and how the indicator moves from side to side.

Figure 24. The arrow points to the cracks in the broken unit.

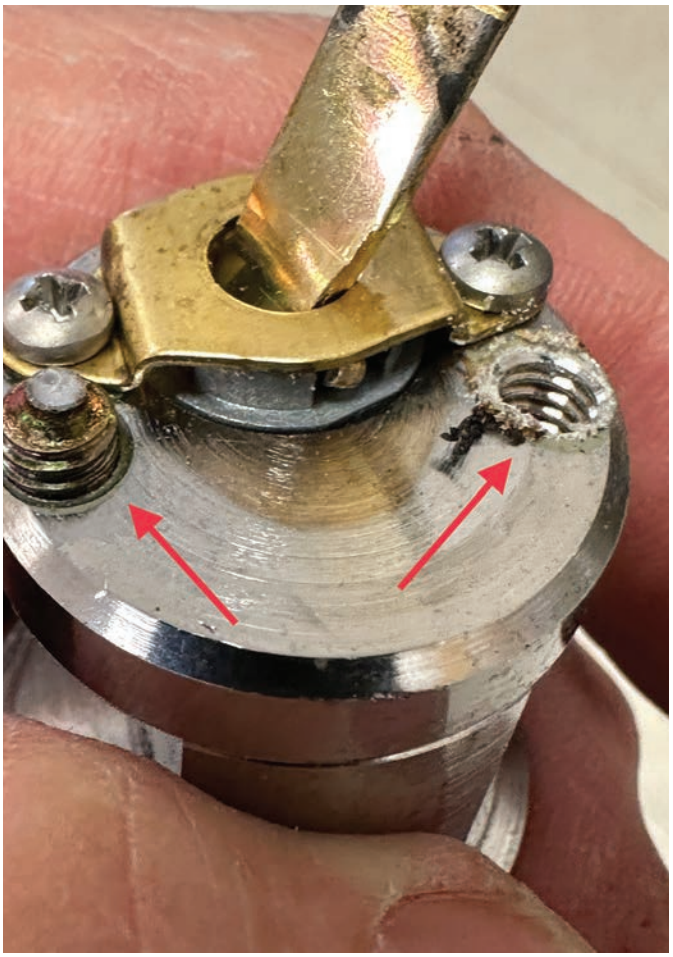

Figure 25. The red arrows point to the broken screw on the left and the white residue from dried red thread-locker on the right.

screws into place on the head of the bar. *Figure 24* shows a broken unit; the arrows point to the cracks. Ordinarily, this would be a simple replacement of the broken bracket, but it didn't turn out that way. In fact, it became miserable.

The thumbturn is basically a rim cylinder with two screws holding in. It turned out that the contractors who installed the panic bars used red thread locker on the screws instead of the blue type. This was a huge mistake because the red stuff is basically permanent stuff that you'd use on engine bolts and thus takes a great amount of torque to loosen. The blue type is designed to be hand-tool removable.

We found that we couldn't get the screws out without exerting a great deal of pressure on them, which is a good way to stab yourself with a screwdriver. The guy who was assisting me tried to get one out and broke the screw. In *Figure 25*, the red arrows point to the broken screw on the left and the white residue from dried red thread-locker on the right. This kept happening.

We had a bunch of these to replace in a short amount of time, so I resorted to using a MAPP gas torch to heat the screws enough to cause the thread locker to melt or break down (*Figure 26*). I used one of those Monkey vices — popular with the lock sport crowd — to hold the thumbturn while I torched it. It worked, and we got the screws out without as much struggle.

I did get some of the broken screws out, but it was slow and painstaking. I had to grip the threads and constantly shift the locking pliers while turning the screw 1⁄16" with each try. I stopped trying to unscrew the screws and just used heat on all of them. I had no more trouble after that.

If I got the screws out in one piece, they had a coating of thread locker residue on them, so I used new screws. When I tried to screw the new screws into the thumbturns, the residue in the screw holes prevented me from doing it. So, I took a 12-24 tap and ran it through the holes (*Figure 27*). The arrow is pointing to the thread locker residue that came out when I chased the threads with the tap. Then I reas-

Figure 26. The author used a MAPP gas torch to break down/melt the thread locker.

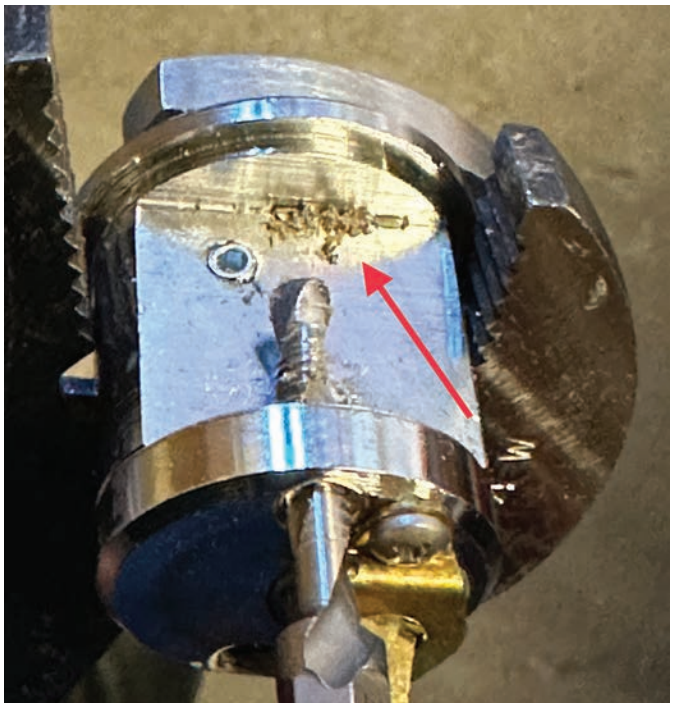

Figure 27. The arrow is pointing to the thread locker residue that came out after the author used a tap.

Figure 28. Inside the red circle, you can see a piece projecting out from the locking mechanism.

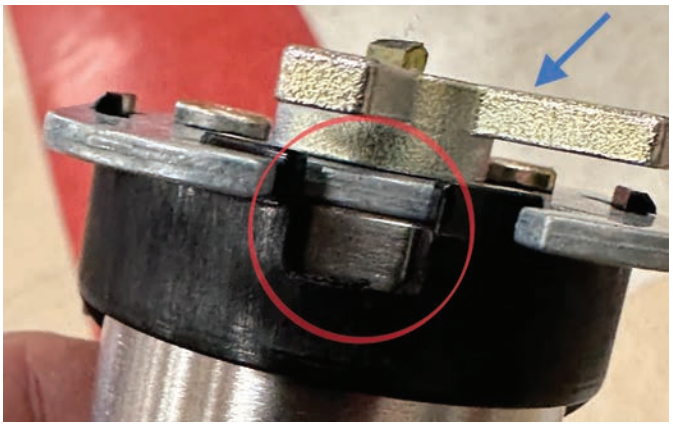

Figure 29. The blue arrow points to the metal part that the thumbturn tailpiece rotates to move the locking bar to either locked or unlocked.

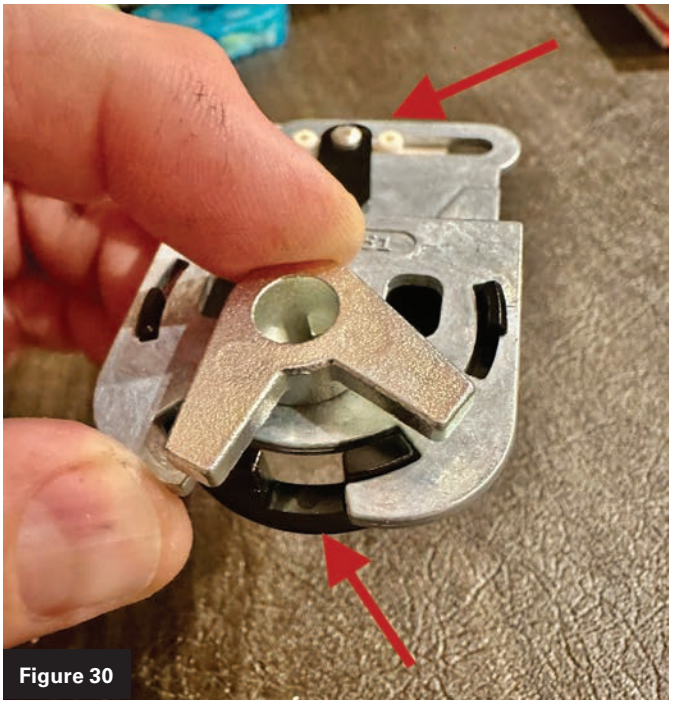

Figure 30

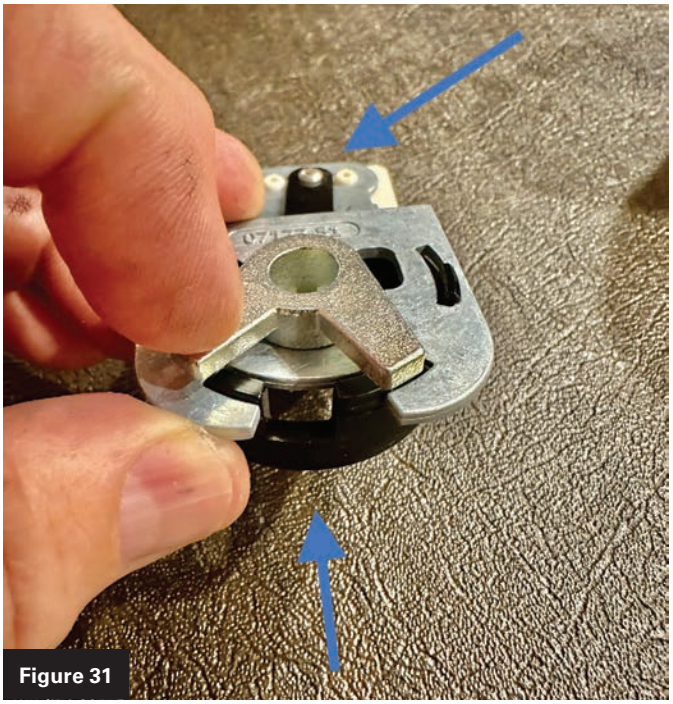

Figure 31

Figures 30 and 31. Note the arrows at the top of each picture, and you'll see how the indicator and the slot shift from one side to the other to indicate locked or unlocked.

sembled the parts with the right type of thread locker.

To give you an idea of how the thumbturn makes the indicator move from unlocked to locked, look at *Figures 28-31*. Inside the red circle in *Figure 28*, you can see a piece projecting out from the locking mechanism. In the red circle in *Figure 29*, there is a slot in the black plastic part that the projecting part fits into. The blue arrow points to the metal part that the thumbturn tailpiece rotates to move the locking bar to either locked or unlocked.

Figures 30 and 31 show different views of the slot in the black plastic and the V-shaped part that moves the locking mechanism back and forth. Note the arrows at the top of each picture, and you'll see how the indicator and the slot shift from one side to the other to indicate locked or unlocked.

Tony Wiersielis, CPL, CFDI, has almost 40 years of experience and has worked in most phases of the trade throughout the New York metropolitan area. He was named *Keynotes* Author of the Year for 2016 and 2022 and serves as ALOA's Northeast Director. Reach him at aew59@juno.com.

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Membership Application

CANDIDATE PLEASE TYPE OR PRINT

Name: ❑ Mr. ❑ Mrs. ❑ Ms. First_____ Last_____ MI____Designation_____

Business Name _____

Mailing Address _____

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Work Phone_____ Home Phone_____ Fax_____

Email Address_____ Website_____

Date of Birth (required)_____ Place of Birth_____ Social Security # (required) _____

US Citizen? ❑ Yes ❑ No If No, citizen of what country?_____

ALOA occasionally makes its members' addresses (excluding phone numbers and email addresses) available to vendors who provide products and services to the industry. If you prefer not to be included in these lists, please check here: o

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Please check the description that best describes you (check all that apply)

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❑ Electronic Security
❑ **Institutional**
❑ Other _____
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❑ Security Professional
❑ Safes
❑ Employee Technician
❑ Mechanical Door Locks & Hardware
❑ Investigative

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Any other license held by applicant (Contractors Lic., Low Voltage) _____

Any other states you do business in and licenses held in those states _____

List all phone numbers used by your company/companies:_____

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Number of Employees_____ ❑ Store Front Business ❑ Mobile Only

How did you learn locksmithing/access control? _____

How long have you worked in the locksmithing/security industry? _____

ALOA member Sponsor Name/Who introduced you to ALOA?
Sponsor Name (Required)_____ ALOA Number_____ Years known _____

Have you ever been a member of ALOA before? ❑ Yes ❑ No If Yes, when?_____ ID #, if known _____

Are you a member of any local locksmith association? ❑ Yes ❑ No If Yes, name of association: _____

Give the names and phone numbers of two industry-related references:

Name_____ Company_____ Phone Number_____

Name_____ Company_____ Phone Number_____

IMPORTANT: Have you ever been convicted of a felony? ❑ Yes ❑ No If yes, please give details on a separate sheet.
All convictions are reported to the Advisory Committee for review.
A routine background check is performed on all new applicants, unless you live in a State in which passing a background check is a part of the licensing requirements. Non-US citizen background checks are required. If you live in a country that does not allow third party background checks, you will be required to submit an authentic report upon request (no copies/duplicates allowed) before final membership approval can be granted. A copy of your business permit/license, license number, business card, company letterhead or suitable proof of employment in the locksmith/access control business must accompany application.

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❑ International	$280	❑ I elect to Go Green	$210

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Must be an ALOA Member in order to join the IAIL.

❑ US and US Territories	$65

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❑ US and US Territories	$270	❑ I elect to Go Green	$240
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❑ International	$280	❑ I elect to Go Green	$210

Note: Your application will be processed with a 90 day waiting period.
Any institutional locksmith not using his/her work address must submit a letter from employer stating that you are an institutional locksmith.

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An application fee and the appropriate dues must accompany the application in order for processing to begin.
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Applicants from countries not listed must submit background check and report from local Law Enforcement with application.

FINAL CHECKLIST

❑ Required Proof of Employment in Industry
❑ Annual Dues Amount _____
❑ Application Fee _____
Total Amount Due _____

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I understand and consent that in the course of reviewing this application ALOA may review publically available information for the purpose of verifying the information submitted and do a background check.

I certify that all statements are true and, if accepted as a member, I agree to abide by the rules, regulations, and Bylaws of ALOA, and further agree to adopt the Code of Ethics of ALOA as my own, and adhere to it to the best of my ability. Should my membership be discontinued, I agree to return my membership card and cease use of all ALOA insignia.

_____

Signature Date Signed

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- Excellent communication skills, written & verbal
- Strong desire to be a TEAM player
- Willingness to learn and grow with our company
- Clean criminal and driving background

What we offer:

- $20 to $25 per hour to start plus bonuses
- "On Call" and overtime work is available
- Company benefits, paid holidays and vacation
- Take Home Company Vehicle
- Continuing education opportunities through ALOA and other venues

Call Jeanne at 239-262-2000 or email jeanne@bblocksmith.com.
Relocation assistance available for the right candidate. <03/23>

Classified Advertising Policy
Classified advertising space is provided free of charge to ALOA members and for a fee of $3 per word with a $100 minimum for nonmembers. Classified ads may be used to advertise used merchandise and overstocked items for sale, "wanted to buy" items, business opportunities, employment opportunities/positions wanted and the like. Members or nonmembers wishing to advertise services or new merchandise for sale may purchase a "Commercial Classified Ad" for a fee of $4 per word with a minimum of $100.

Each ad will run for three consecutive issues. For blind boxes, there is a $10 charge for members and nonmembers. All ads must be submitted in a word document format and emails to adsales@aloa.org by the 15th of the month two months prior to issue date. ALOA reserves the right to refuse any classified advertisement that it deems inappropriate according to the stated purpose of the classified advertising section.

HELP WANTED

Bullet Lock & Safe
181 Broadway, Long Branch, NJ 07740
info@bulletlock.com

Bullet Lock is a large retail establishment located in Monmouth County, New Jersey that has been in business for 40 years. Our store is 18,000 sq. ft. with 15 employees and 5 service trucks on the road. We sell high-end residential and commercial door hardware.

2 full-time positions available:
Inside Shop and Outside Road Technician.
Experience preferred but willing to train.

Outside Road Tech works 8:30am - 5:00pm Mon-Fri

Inside Shop works 8:30am - 5:00pm Mon-Fri and 10:00am - 4:00pm Sat

Responsibilities in shop include key cutting, bench work and hardware sales. Product knowledge important. Outside road technician provides service calls to both residential homes and commercial businesses. Responsibilities for road technician include but not limited to basic rekeying, lock installation and repair work.

Ideal candidate should be clean cut, reliable, be able to interact with customers and have a willingness to learn. Mechanical aptitude a plus.

Benefits available include health insurance, paid vacation, paid holidays, 401K plan.

Please submit resume by email to info@bulletlock.com. <02/23>

AD INDEX

Advertiser	Ad Location	Website	Phone Number
ASSA-Ruko/Technical Services	page 45	www.assatechnicalservicesinc.com	(724) 969-2595
Autel	pages 22, 23	www.autel.com	(855) 288-3587
Big Red	page 45	www.bigredsafelocks.com	(877) 423-8073
Bullseye S.D. Locks	page 45	www.bullseyesdlocks.com	(800) 364-4899
ClearStar Security Network	page 60	www.clearstar.com	(360) 379-2494
Framon	page 3	www.framon.com	(989) 354-5623
Hollon Safe	page 15	www.hollonsafe.com	(888)455-2337
ICOR	page 49	www.BESTLocksDepot.com	(708) 491 5869
J.C. Gury Signs	page 17	www.jcgury.com	(800) 903-3385
Lock Caddy	page 53	www.lockcaddy.com	(708) 246 6769
Locinox	page 29	www.locinoxusa.com	
Seclock	inside front cover, page 45	www.seclock.com	(800) 847-5625
Stone and Berg	page 21	www.stoneandberg.com	
Turn 10 Wholesale	page 1	www.turnten.com	(800) 848-9790

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For more information, email conventions@aloa.org or call (214) 819-9733.