The official publication of ALOA SPAI, an international association of security professionals February 2021

KEYNOTES

SECURING YOUR SUCCESS

Installing the *Schlage* BE375 Touch Deadbolt

Tips, troubleshooting and programming

Upgrading Hardware for Access Control

Replacing a lock and adding an electric strike

PLUS

Forensic Applications for the LockTech SmartKey Decoder

Using Dashboard Reports | CFL Recertification | Automotive Quick Tip

Introducing This Month's Issue

How to Navigate the Digital Edition

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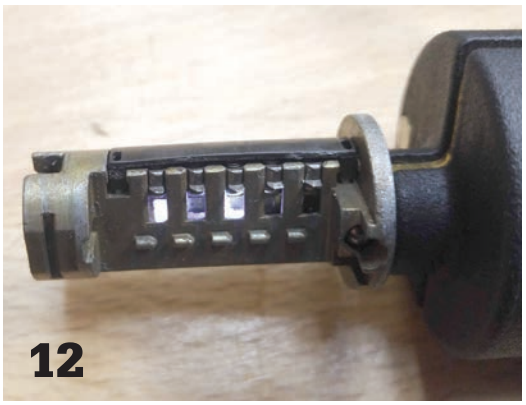

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What's New

Departments

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KEYNOTES

FEBRUARY 2021 | VOLUME 67, ISSUE 2

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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To Better Days Ahead

I know, I know... better days? From what we've seen so far, 2021 is having some challenges akin to last year, and the pandemic is raging on. Many of us have had loved ones stricken ill with COVID-19, some businesses have suffered greatly, and there's all kinds of uncertainty in the air.

Yet, even with all of this happening, hope still abounds. The vaccine continues to roll out, and perhaps some of you have been able to get it. As more people are vaccinated and the rate of virus transmission is slowed, hopefully the economy will start to recover more.

And hope is what we have at ALOA as well. Last year was a tough one for us. We couldn't hold our ALOA and SAFETECH conventions, we had to downsize our staff, we had to temporarily suspend printing hard copies of our magazines, and we couldn't hold classes at ALOA headquarters in Dallas. Our loss of revenue was severe, but with ingenuity and creativity from our board and staff, we gained some stability: We started holding webinars, increased our social media presence, added features to the digital edition of *Keynotes*, received Paycheck Protection Program funds and more.

Some of the resulting creativity will have a lasting positive impact on ALOA for years to come. We've changed some things for the better and have brought the association further into the digital age. In particular, we hope to continue holding webinars well after this pandemic ends. Our members seem to love them! There's always a silver lining in challenging situations.

Improvements in 2021

More improvements are still coming. Despite the challenges of the past year, ALOA member retention is actually up for this cycle. A sincere thank you to all of our members who have stuck with us and continued to support the association. We appreciate you putting your trust in us, and we will continue to do our best to meet member needs and make program improvements.

ALOA and SAVTA are also moving forward with the 2021 conventions. In fact, SAFETECH registration is open now! Go take a look at the online brochure on SAVTA.org to see the classes and events we are holding this year. We are taking extra precautions to make it safe for attendees, including having sanitizing stations throughout, asking attendees to wear masks and spreading out students in classrooms. Come join us April 12-17 in Reno, NV.

Look for information soon via email and in *Keynotes* about the ALOA Convention & Security Expo as well. Save the dates of July 25-31, and make plans to travel to Orlando. We'll be taking the same precautions there as we will at SAFETECH.

And, if you aren't a Go Green member, you've seen that the printed magazine is back! We're thankful to be able to return to printed copies, but I do hope you also take advantage of the digital edition. It's nice to see the videos of authors to hear a little bit more about them, and the links make it easy to visit any referenced websites or advertisers.

I am sure that 2021 will continue to be fluid, just as last year was. ALOA will send you updates as needed, and we hope it will be more good news than not. I see this year as another challenge to improve this association, and I am confident that we will. So here's to better days ahead — for ALOA and for all of you.

Jim Wiedman, CML
President
ALOA Security Professionals Association, Inc.
president@aloa.org

Get Educated in 2021

Every time we survey our members or talk to them informally, by far their greatest request and need from us is education. From classes and seminars to certification, our members look to us to help them move forward in their businesses and careers.

Over the past year, our members' educational needs have been somewhat different. As the whole world shifted operations to online-only as much as possible, so did we. When it became clear we would be unable to hold our 2020 conventions and classes at ALOA headquarters as usual, ALOA switched gears. We took inventory of our class offerings and assessed how to move forward. The result was innovation that will have a lasting impact on ALOA Education well into the future.

Education Improvements

Before the pandemic began, ALOA and SAVTA were focusing on refreshing class content and updating the PRP. We added new classes at the conventions, and PRP candidates started being able to take certain tests online from their homes or offices.

As COVID-19 ravaged the world and in-person events were canceled, we knew we had to do even more to reach members where they needed us: remotely! Immediately, ALOA jumped into action, developing webinars where industry professionals could learn new skills and earn CEUs for licensing.

Since last summer, we've often held multiple sessions per week at different times so we can reach as many interested attendees as possible. We've had topics ranging from codes and doors to master keying and automotive work. The response has been tremendous, and we are happy to be able to offer this service. If you have suggestions for webinar topics, please contact education@aloa.org.

We have also started a podcast, *Locksmith Talk With ALOA*, that members can listen to free of charge. Hosted by William M. Lynk, CML, CPS, CMIL, ICML, M.Ed., episodes feature guests who discuss everything from employee relations and legal issues to master keying and GSA work. We've already released several episodes, so go listen if you haven't already. You can easily find the podcast by searching for "Locksmith Talk With ALOA" on common podcast platforms such as Spotify, Audible, Apple Podcasts and more. You can also find a link to it on the ALOA Education calendar.

Setting Your Goals for 2021

Just like last year, this year is bound to be a bit different for many people. But that doesn't mean you can't still get education! Set some goals for the year. Do you want to learn a new skill? Get your business in better financial shape?

No matter what your goal is for education, ALOA can help. As of press time, we will be holding our SAFETECH and ALOA conventions, with extra steps and precautions to ensure that they are safe learning environments for attendees and staff. SAFETECH registration is open, so assess what classes you'd like to take to learn new skills or improve your existing ones. If you don't ever seem to have time for business classes at the ALOA Convention, attending SAFETECH is a great way to work those in!

We will soon have more information on classes for the ALOA Convention, so keep an eye out. For now, mark your calendars for July 25-31 and plan to be in Orlando for some education and networking!

No matter what your goals are for 2021, I wish you well in your pursuit of them. Thank you again for being a part of ALOA, and have a great year of learning!

Mary A. May

Mary A. May
Executive Director
mary@aloa.org

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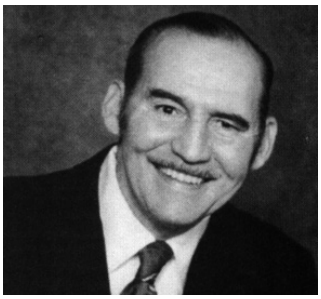
In Memory of ALOA Charter Member Constant Maffey



ALOA Lifetime member and Past President Constant O. Maffey, RL, passed away January 5 in his sleep. He had been a charter member of ALOA since the organization's inception in 1956. He was 97.

Maffey served as the sixth president of ALOA, from 1968 to 1970, and also previously served as president of the Master Locksmith Association of New Jersey. He was awarded three patents over the course of his extensive career in the security industry and was the recipient of the prestigious Philadelphia Award in 1972. He owned Otto's Industries in Newark, NJ, where he invented and manufactured 5th-wheel locks.

Medeco Releases Medeco 4 System

Medeco has unveiled the new Medeco 4 (M4) high security key system, which is designed to protect against physical attack and unauthorized key duplication.

Joseph Kingma, Medeco general manager, ASSA ABLOY, says, "Keeping openings secure was the catalyst behind the capabilities of M4. With more security features than any key system we've ever made and an innovative design that protects against the latest threats like 3D printing, M4 reaffirms Medeco as the name that built high security."

M4 cylinders are UL 437 listed and feature solid-brass machined construction and strategically placed hardened-steel inserts to thwart drilling attacks. In addition to tumbler pins that lift and rotate, the M4 design includes four side pins: three finger pins and one lift pin, which must all interact with the sidebar to open, providing pick resistance. The patent-pending M4 key design, with its shuttle-pin movable element, also helps protect against the emerging threat of 3D printing.

For more information, visit www.medeco.com/M4.

IN MEMORIAM

Norman E. Vitale, CRL, of Pawcatuck, CT, has passed away at age 65. He had been a member of ALOA since 1988.

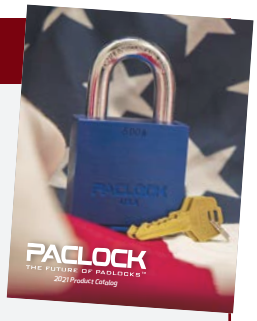
Orvis Kline, Sergeant-at-Arms for the Greater Philadelphia Locksmiths Association, has passed away after a long battle with cancer. Over the years, he served in many roles for the GPLA, including as president, chairman of the board, corresponding secretary, recording secretary, member of the board of directors and at least twice as sergeant-at-arms. He served unofficially as the association parliamentarian and was chairman of numerous committees. He was presented with the Hermann C. Henssler, Jr. Memorial Award in 2004.

Register for SAFETECH!

SAFETECH REGISTRATION IS NOW OPEN! VISIT SAVTA.org to take a look at the full convention brochure and to sign up online. Join us April 12-17 in fabulous Reno, NV, at The Atlantis for a week of classes and events.

Reserve your hotel room by calling (800) 723-6500 and using the group name "SAVTA" or "SAFETECH." Questions? Email conventions@aloa.org or call (214) 819-9733.

NEWS BRIEFS



PACLOCK has introduced its new price list and catalog for 2021. Visit www.paclock.com/catalog for more information.

Denise Parks has retired from **Professional Business Products**. Kristy McFarland is the new contact for all business needs. She can be reached at kristy@pbp2000.com.

AUTEL has launched the Autel Virtual website, where you can watch video highlights of each tool line, dive deeper on in-depth category pages and speak live with an Autel product expert. Visit autelvirtual.com and click on the Key Programming category at the top.

One year after **ABLOY USA Critical Infrastructure** hired Shayne Spears as the new vertical market manager for Oil & Gas, he has been promoted and will now serve in a dual role as national accounts manager. Based in Texas, he continues reporting to Managing Director Jerry Burhans. He will work with Ray Marquis, ABLOY's vertical market manager – Distribution & OEM, to develop national accounts and will continue promoting the brand to ABLOY's channel partners.

Wilson Bohannan Lock Company, a family-owned padlock and commercial locking systems manufacturer in Ohio, has been named a Milestone Award honoree by the Conway Center for Family Business. The award is in recognition of Wilson Bohannan Lock Company's 160th anniversary. The company was founded by Wilson Bohannan in April 1860 in Brooklyn, NY. It moved to Marion, OH, in 1927, where the company's 72 employees still engineer, fabricate and manufacture all of its products at its 42,000-square-foot facility.

PRODUCT BRIEF

ABLOY USA Critical Infrastructure has added the CY436T key-in-knob cylinder to the ABLOY PROTEC2 line, which is UL 437 listed. To place an order or for more information, email Orders.AbloyUSA@assaabloy.com.

Codelocks Inc. has released an ISO-certified photocatalytic coating that offers protection against viruses, bacteria, germs, volatile organic compounds (VOCs) and other environmental toxins. Clean by Codelocks is a clear, durable coating that reacts to light to convert bacteria and germs into a non-toxic compound. The coating is resistant to chemical cleaners and provides enhanced, active protection against bacteria. Customers visiting the Codelocks website can opt for the new coating by ticking a checkbox next to the chosen product. For more information, visit www.codelocks.us/cleanbycodelocks.

NEW APPLICANTS

As of December 4, 2020

ARKANSAS

Harrison
- **Christopher W. Black**
  Villines Lock and Key, LLC

MARYLAND

College Park
- **James E. Mullins**
  Sponsor: James W. Mullins, CPL

NEW JERSEY

West Orange
- **Joseph M. Andrade**
  Harrison Lock

TEXAS

Austin
- **Jodie G. Strong**

VIRGINIA

Roanoke
- **Amber D. Pratt**
  B & D Lock Co.

PUERTO RICO

San Juan
- **Nelson Mangual-Torres**
  Mangual Lock & Safe
  Sponsor: Alberto R. Gorbea

CANADA

Cornwall, Ontario
- **Sean Villeneuve, CRL, CPS**
  SV Lock & Safe

HONG KONG

- **Yiu Sun Loon**
  Sponsor: Ying Wai Sin, RL

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 214-819-9736. 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 10-12
IML Security Expo
Universal City, CA
www.imlss.com

APRIL

April 12-17
SAFETECH 2021
The Atlantis, Reno, NV
conventions@aloa.org or (800) 532-2562

JULY

July 25-31
2021 ALOA Convention & Security Expo
Caribe Royale, Orlando, FL
conventions@aloa.org or (800) 532-2562

New Procedures for CFL Recertification

As we move into 2021 and hopefully toward being COVID-19 free for most Americans, your Certified Forensic Committee team has been working behind the scenes, creating new testing procedures for recertifying your CFL credential. As you know, as a Certified Forensic Locksmith (CFL), we are called upon to testify in court, and our credential always comes under scrutiny. It's important to show that our CFL credential is held to strict standards within our industry.

A new recertification application form will be sent to all recertification members. It's important to fill out this form, and you must list all of the cases that you are working on or have completed within the past three years. A second form goes along with this application that you must certify, sign and date to confirm that you met all of the above criteria for your recertification.

If you have not worked any cases that you can document, then you will be required by the committee to submit a sample case per our directions based on your CFL certification. During this testing process, you can continue to use your CFL credential. Once recertified, your certification extends three years from the expiration date of your current CFL. The charge for recertification is $150 for your first CFL and $50 for each additional CFL you are registered with. Just so you understand, if you have more than one CFL, they all expire at the same time because they are all tied to your credential.

The following are the credentials you could obtain:

- Certified Forensic Locksmith in General Forensics
- Certified Forensic Locksmith in Automotive
- Certified Forensic Locksmith in Architectural Hardware
- Certified Forensic Locksmith in Fire Door Inspections
- Certified Forensic Locksmith in Safes and Vaults

There are specific requirements for each of these credentials. For more information, please contact me directly at my IAIL email. If you have any questions, suggestions or ideas, please contact me directly at IAILPresident@aloa.org.

"It's important to show that our CFL credential is held to strict standards within our industry."

Tom Resciniti Demont, AHC, CAI, CFDI, CFL, CMIL, CML, CMST, ICML, IFDI, LSFDI, ARL. 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 Ross Squire at ross@abcforensic.com.

Forensic Applications for the LockTech SmartKey Decoder

Tex Thompson tests this decoder's usefulness for investigative locksmithing.

When my LockTech Kwikset SmartKey Decoder came in the mail, pulling it out of the shipping envelope felt like drawing the sword from the proverbial stone. *Finally,* I could blow through a SmartKey lockout with speed and sophistication worthy of Ocean's 11.

As it turns out, the day you get your LockTech decoder in the mail is pretty good. But better yet is the day you realize your fantastic new toy has forensic applications, too. As Tom Demont noted in a recent *Keynotes* column, some investigative jobs don't allow you to take hardware home for examination — or even remove it from the door. The development of a sophisticated camera that will penetrate fully into the lock and allow you to take detailed photographs of the interior represents a huge leap forward in investigative locksmithing. The current slowdown in business makes this the perfect time to discover what the LockTech decoder can do for our field.

Testing It Out

Naturally, my first thought was to test out the decoder with tools most commonly used for covert entry. I grabbed a handful of new SmartKey cylinders and laid out a pick, rake, snap gun, bump key, KW1 Lishi tool and (for Kwikset SmartKey) a few force keys as well (*see Figure 2*). It didn't take long to realize that I had been overly optimistic in my planning.

After all, the LockTech decoder has a single mirror angled toward the left side of the cylinder where the SmartKey wafers

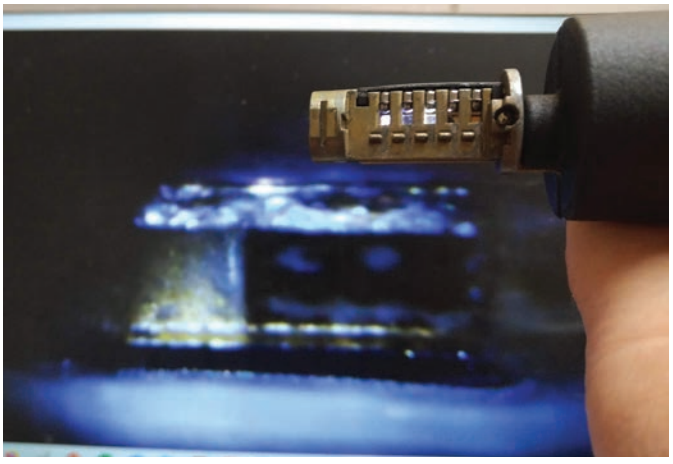


Figure 1. The LockTech decoder is fully inserted into a Kwikset SmartKey cylinder, and its corresponding view is on the computer screen behind it.

Figure 2. Shown from left to right are: the KW1 Lishi tool, rake and pick, bump key, snap gun and force keys.

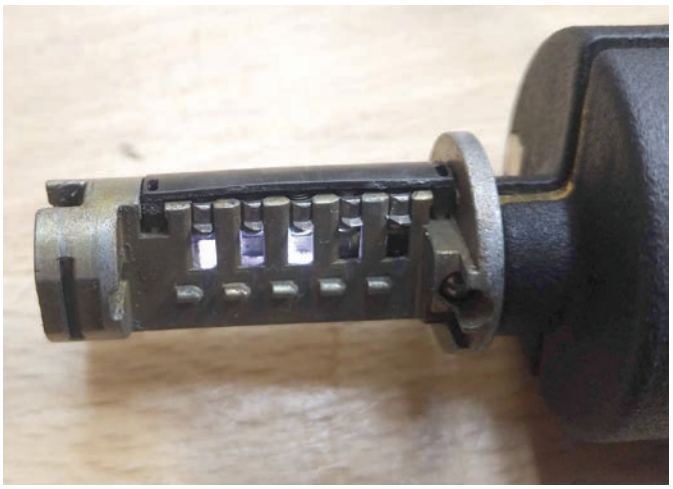


Figure 3. The LockTech decoder is fully inserted into a SmartKey cylinder, with sidebar and wafers removed.

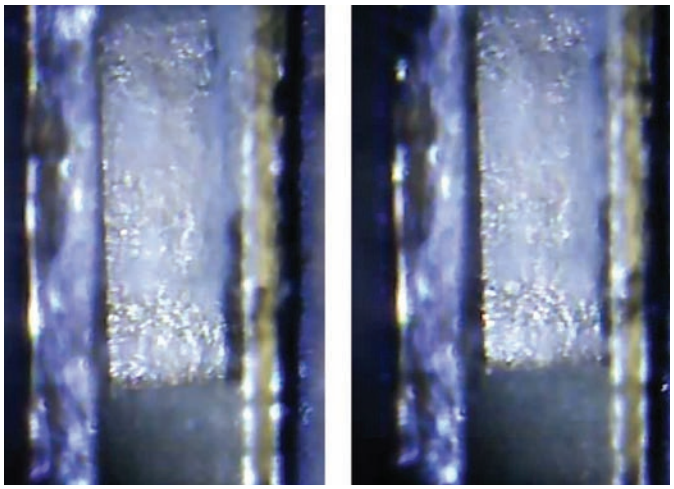


Figure 4. The author attempted picking on the first wafer: before (left) and after (right).

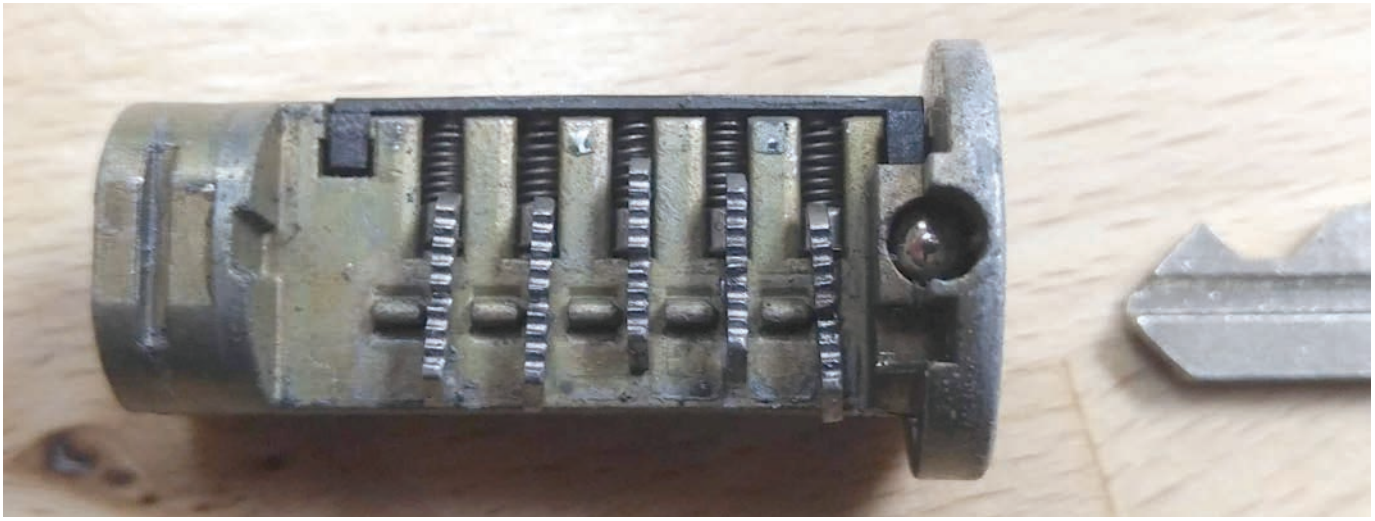


Figure 5. The author realized she should have been looking *between* the wafers.

are situated. It doesn't provide a view of the drivers along the top, so any tool that would *only* mark the pins of a regular cylinder would be extremely unlikely to leave marks that the LockTech decoder can pick up. Therefore, any tool that acts only within the area of normal key contact — a bump key, force key, snap gun, etc. — likely won't touch the area visible to the decoder. That left me with just the tools that we know are capable of "coloring outside the lines" of a given keyway: the pick and the rake.

I started by photographing the wafers of a new SmartKey cylinder in exactly the positions dictated by the LockTech spacers. Then I went to town with my tension wrench and pick, giving myself a leg up by using moderate force and no special degree of skill. (Ever since Mr. Li's wonderful tools entered the residential market, I have had no difficulty simulating strictly amateur "analog" lock-picking skills.) Then I photographed the same cylinder in the same positions and compared the images.

At first, I was disappointed: I could not see any meaningful difference in the before and after shots (*Figure 4*). We all know that SmartKey products are "value engineered," so I expected the wafers would mark as easily as traditional pins.

Then I went back to my deconstructed cylinder and realized my mistake. After all, the SmartKey lock is designed so that the key never makes direct contact with the wafers — they are separated by a windowed portion of the plug wall, leaving the drivers to contact and move the wafers into position. While it's still possible that a pick or rake might sneak into one of those tiny windows and mark a wafer, they are much more likely to mark the plug wall itself. **In other words, I should have been looking *between* the wafers.**

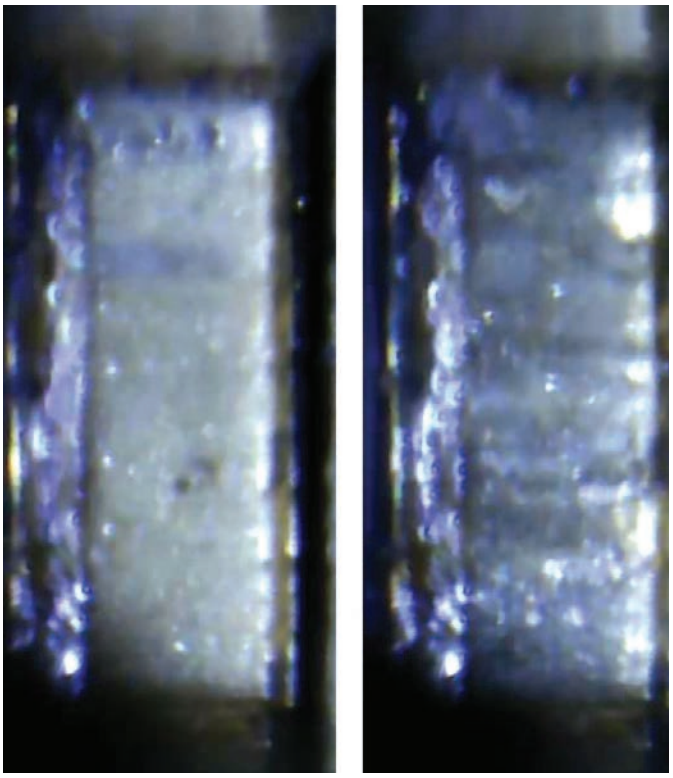


Figure 6. The author is raking on part of the plug wall just before the third wafer: before (left) and after (right).

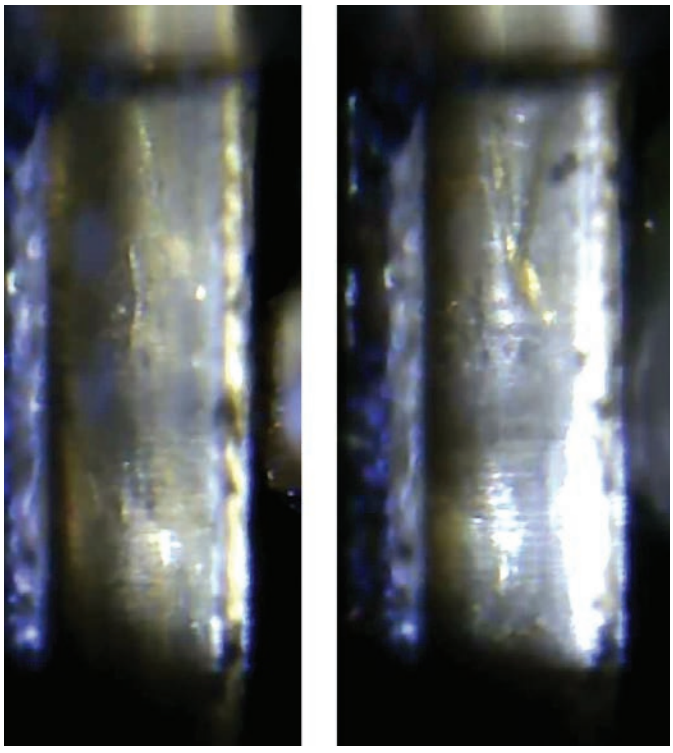


Figure 7. The author picked a standard Kwikset key-in-knob cylinder; the before shot is on the left, and the after image is on the right.

And that made all the difference. After another round of photographs, it was easier to see marks that we commonly find on bottom pins of traditional pin-tumbler locks: straight gouges for the rake and irregular lines for the pick (*Figure 6*).

Testing on a Pin-Tumbler Lock

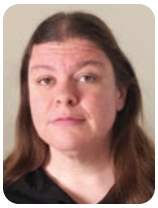
This got me wondering: What could a LockTech decoder do inside an ordinary pin-tumbler lock?

I pulled out a couple of Kwikset KIK cylinders to try it out. This time, I used the LockTech spacers again, but only to ensure that I was photographing identical areas of the plug wall each time.

The results were promising, but not as clear as I'd hoped. I think part of the difficulty is that the LockTech decoder's camera is designed to focus at exactly the distance at which the SmartKey wafers are located, and there is no way to change that focal area. The plug wall is closer to the camera than intended, and that makes the results perhaps a bit "farsighted." With that said, it does help to be able to turn the LED's brightness up and down in such fine increments. This can help illuminate fine marks when the light catches them just so.

The LockTech decoder is magnificently engineered for its intended decoding purpose — and likely of limited value for forensic applications. However, I can't help but fantasize about a slightly modified version of this tool in which the mirror is angled *up*, allowing us to harvest the enormous wealth of evidence that we so often find on the faces of bottom pins… without removing the lock from the door. Indeed, perhaps a future version of this tool could include swappable keyways, allowing us to change from a KW1 to an SC20 as easily as we change out drill bits or Dremel attachments. It seems impossibly far-fetched at the moment, but six months ago, I would have said the same about the tool currently sitting beside me on the workbench.

In the meantime, I will enjoy my LockTech decoder as its makers intended, and resist the urge to field-modify it for forensic purposes… at least until they have cleared up their back orders.



Arianne "Tex" Thompson is a literary locksmith: a part-time author and editor, and full-time mobile service technician at Bee's Keys. As a writing instructor, she has presented at conferences from Hawaii to Scotland, but as a locksmith, she is happiest running calls on the busy streets of Dallas. Tex is an enthusiastic member of ALOA and IAIL, an aspiring investigative locksmith, and a notorious ruckus-raiser at ALOA events far and wide.

Using Dashboard Reports

These reports provide a snapshot of your business' vital signs. By Noel Flynn

This is the 18th article in the "Tools for Managing Your Business" series. This topic was requested by our readers. Since this is a how-to article (I can already hear the yawns), go ahead and take a quick look at the dashboard report template identified as *Figure 1*, which appears later in this article — especially if you aren't familiar with such reports. Don't dwell on the template, but get a feel for how our discussion will evolve into creation of such a report and what one might look like. You'll be asked to print out that template later on, but feel free to do it now.

What's a Dashboard Report?

We're all familiar with the various gauges and indicators on the dashboards of our vehicles, although some of the more traditional ones aren't visible in newer-model cars unless there is a mechanical or perhaps an electrical issue. The more well-known gauges include temperature, speedometer, oil pressure, tachometer, fuel, etc. Clearly, driving a vehicle would be much more dangerous without these helpers. Airplanes have a far more sophisticated version (a dashboard on steroids) called an instrument panel.

As the name suggests, a dashboard report is essentially the business equivalent of the various gauges and instruments

you see on the dashboard of your car. For your business, your dashboard report is a display of various barometers that provide a snapshot of what's happing in your business.

Why Should I Have One?

OK, so I get why an instrument panel is important for driving my vehicle or piloting my spacecraft, but why do I need such an instrument panel for my business? The short answer is that you are probably busy taking care of all the various parts of your business and this means that you could easily miss or overlook some signs of trouble. If you encounter issues (or perhaps see subtle trends) in your business, the sooner you become aware of them, the better.

What Information Should Be Included?

Just like your medical doctor wants to check your so-called vital signs, it's the same idea with your business. Such vital signs may not immediately get to the bottom of your ailment, but hopefully they will enable your physician to conduct a rapid process of elimination. Coupled with any symptoms you may be exhibiting, these important vital signs help zero in on whichever area may need further scrutiny. Sure, some further tests may be required, but now we have a *much better* idea of where to take a closer look.

So, all that medical stuff makes sense, but what kind of information do I need to include in my dashboard report? Since each business is somewhat unique, we'll begin on a generic level with the three primary pillars of any business: sales, production and finance. Let's be clear: Your dashboard report is not intended to be a substitute for a set of more targeted and detailed reports that you should have to help manage your business successfully. Rather than jump ahead to creating a dashboard report, let's discuss the kinds of information and data you may choose to collect and why. Also, remember that, to be an effective tool, your dashboard report should feature *daily* numbers/data.

Sales

When we use the term sales in this context, we're referring to the broader term "business development." I say this because your company structure may or may not include a separate marketing department or person. Of course, depending upon the nature of your business, you may want or need to make a few modifications to fit your situation when employing the following principles.

On a high level, we're interested in keeping track daily of at least the new business coming in the door. It's also a good idea to track these sales numbers on a cumulative basis for each month, quarter and year. So, your report should include daily sales volume, but you may prefer to also have separate sub-categories of sales (such as installations, repairs, products, services or whichever sales subcategories you prefer to track), and then have a total sales number. Remember: If you spot something going on in your dashboard report's sales numbers, you'll likely need to drill down to determine the more specific area and cause. As a word of caution, keep in mind that the more you clutter up your report, the greater the effort required to maintain and update the daily data.

If you try capturing too much data, your dashboard report will likely take more effort than it's worth, you'll become frustrated, and your report will fail. Pause now briefly and start planning who to ultimately blame if this doesn't work out well for you! Incidentally, if this blame art (aka CYA) comes naturally to you, congratulations: You're a good potential fit for Corporate America — or possibly government.

Decide whether to consider your sales as "orders generated" or "orders filled and invoiced." To many firms, sales numbers represent what has been invoiced, whereas others look at what are called bookings: orders received but not yet filled. To figure this out, consider what type of business you're in, your business cycle and especially how long it takes to move from receiving an order to when you complete the work (or ship the product) and generate the invoice. You also need to consider the internal system you use for tracking such data. Of course, you can track your sales by both bookings/orders and shipments/invoiced. For project/jobs work (especially anything construction related), you may also be dealing with progress payments where you'll be generating invoices for partial completion at various billing milestones.

As an example, manufacturing firms will typically be very interested in bookings (orders received) and backlog (orders remaining open). Fundamentally, this data is crucial to their planning decisions. In other words, they're trying to anticipate demand versus on-hand inventory. If they don't have what's needed in stock, they'll have to build something. This, in turn, often translates into issues of capacity in terms of machine time, labor, buying materials and scheduling. All of this must be balanced with suppliers' lead times and customers' required shipment dates. Similarly, if you are running a service business, you'll be interested in trying to schedule your crews and may also need to order materials required to complete jobs.

Production

To determine what to track in the production area, consider which services and/or products your business is providing.

Think big picture: You can either track at a high macro level or break down your primary activities into sub-categories. As with the sales category, don't get carried away with tracking too many activities on your dashboard report. *You are primarily trying to use your dashboard report to act like an alarm system or radar.* The report is intended to alert you that your attention is needed and, ideally, suggest which area(s) you need to investigate further.

The main thing you need to know is that enemy planes are approaching. Sure, if practical, it would be nice to also know the distance, direction, altitude and how many. Ideally, you'd also like to know what kind of planes, but at some point, the effort (and perhaps cost) required for that level of detail renders the cost/benefit ratio unacceptable. *Production is often regarded as the least important element of a dashboard report because the data is more internal in nature.* Most of us are probably already intimately aware of our workload and related information because of our need for scheduling work and similar necessities.

But we don't want to have either extreme. Who wants to have too many crews, technicians and/or service vehicles sitting around without enough work or be short-handed and risk upsetting our customers? If any of this scheduling stuff sounds familiar, you're probably very well acquainted with the never-ending juggling act known as scheduling. While dashboard reports can be helpful here, you'll likely need additional, more detailed production and scheduling-type reports and data.

Finance

Some would argue that keeping track of the financial stuff is the most important, and even more important than sales data. Fortunately, you can track both. So, what kind of data or numbers are we talking about for the financial section of our dashboard report? Fundamentally, this section is all about cash but, of necessity, must include areas that indirectly relate to our cash. Think in terms of three categories: cash, accounts receivable (A/R) and accounts payable (A/P). If applicable, we can also include inventory and possibly outstanding purchases not yet invoiced to us. Let's take a closer look at these.

You've likely heard the expression "Cash is King." If you run out of cash, the fat lady will indeed sing, and the game is over for your business. In a perfect world, you'd transact business only in cash and thus not have to extend credit. In this fantasy scenario, all the planets in your commercial universe would be perfectly aligned, as long as you generated sufficient business volume and your profit margin was satisfactory. In your Utopia world of all-cash sales, where customers never write a bad check, we can almost see the smiling Hobbits playing their magic flutes and little fluffy bunny rabbits frolicking in the grass field as you dance gracefully (well, maybe not so gracefully) while singing in the meadow filled with sheep. OK, snap out of it and return to the real world! Oh, and better wash that sheep dung off your shoes.

We need to keep track of our cash on a daily basis. This includes what's in your business checkbook and possibly a line of credit. But remember: We can make our cash balance look

better or worse by paying our bills on time (or not) and/or how much credit we extend and how promptly we get paid. Again, we need to be cognizant of our business cycle. If a significant portion of your business happens to be on a cash basis, this will help with your overall cash flow. If you aren't familiar with the term cash flow, it basically means your cash coming in versus your cash going out and what's left afterward. A more comprehensive definition also considers at least your A/R and A/P and anything else that will impact your cash. So, let's begin by looking at A/R.

Far too often, companies focus hard upon their collections but still manage to miss the boat. Why? Because they don't make sure that invoices are generated immediately, or at least the closest day after when the service was provided, or the product shipped. What's the point in compressing your A/R collections by two days while taking five days to generate your invoices, after the work has been done and/or product shipped? *Review your processes and find ways to compress this billing cycle.* It's imperative to generate your invoices ASAP after the work has been done. This is an issue that typically will not appear on either your dashboard report or any other place, so you need some mechanism to measure this!

When you invoice the customer for credit sales and have not yet been paid, accounts receivable (A/R) are created. Thus, your A/R represents what you might call "expected future cash." Because you so thoroughly enjoyed your time spent in that peaceful Utopian all-cash meadow, it might come as a shock to know that customers don't always pay their bills on time. No. I'm not making this up, and it can even get worse: Some customers don't pay you at all. Ever! This is why accounting software generates what is known as an A/R aging report. Such reports list how much you are owed and assign the invoices to time buckets (numbers of days outstanding) of typically 30, 60, 90 and 120+ days.

Indeed, the older your A/R, the less likely you are to get paid. Even if you do, it's more likely you'll end up settling for some negotiated amount less than what you're owed. To emphasize this point, business lines of credit are often secured by a company's A/R, but banks usually won't permit any A/R over 60 days to be considered for this purpose. Again, you should include a daily A/R balance in your dashboard report, but you also need one or more dedicated detailed A/R reports to manage your collections. *It's vital to stay on top of your collections!* If necessary, offer early-pay incentives.

Next, let's talk about when the shoe is on the other foot. When your suppliers extend credit to your company, you receive a bill/invoice from that supplier for whatever goods or services you purchased. Such bills/invoices represent short-term (in accounting speak, this means less than one year) debt you owe, and such unpaid bills/invoices are collectively known as accounts payable (A/P). Thus, your A/P essentially represents what you might call "a future demand on your cash." No. We can't just go back to that peaceful Utopian fantasy all-cash meadow again. (But, in case you're wondering, word on the street is that the Hobbits got busted for operating a crystal meth lab, the bunnies accepted a plea deal for testifying and the sheep were deported. Yes, I know, they seemed so nice!) So, moving along, just like your A/R aging, your accounting software generates what is known as an A/P aging report. This report spells out how much you owe and assigns the bills/invoices to time buckets, typically 30, 60, 90 and 120+ days outstanding.

As your company builds some history and establishes a track record, you will likely set up credit accounts with various suppliers, such as distributors or manufacturers. Such accounts usually offer standard payment terms, although specific bills/invoices may have nontraditional terms because of a special deal or promotion. Ordinarily, you'll want to pay the oldest bills/invoices first, but other factors may influence such decisions. In the real world, just like production scheduling, managing your A/R, A/P and cash is another juggling act for business owners or managers. Establish credibility and maintain a good relationship with your key suppliers so that they'll continue to work with you, especially when you encounter a rough economic patch where cash becomes extremely tight.

Irrespective of whether you have 30, 60 or some other terms to pay your A/P, one thing to consider is when the clock starts running on your bills/invoices. Some companies use the invoice date, but others use the date the invoice was actually received. Obviously, the choice of system can make a difference, especially if your supplier is snail mailing their invoices. Acutely aware of this, many companies prefer to deliver their invoices at point of sale or promptly send their invoices via email or fax. Have I mentioned that you need to get your invoices out immediately, if not sooner?

If/when your cash becomes very tight, one of the levers you can pull is to delay paying some or all of your A/P. This is known as "dragging your payables." Another lever that may be available is to use your line of credit, but far too often, such working capital credit facilities are already maxed out. Yes, you can also open up a credit account with another supplier, but be careful with this practice. No, we're not going back to that Utopian meadow. Enough about the darn Hobbits and bunnies… get over it!

Developing a Report

Now that we've discussed what to include in your dashboard report, let's develop such a report, so we can see what this looks like. As we walk through the various sections of our template (*see Figure 1*), we'll discuss which information we are capturing, what it tells us and, generally, how to use our dashboard report.

Note that our specimen has intentionally only been populated with a few days of data. It's more important to review how to use this report. A bunch of data can sometimes become a distraction when we focus too much on the specific numbers. Once you fill in data for a few days, the process just repeats itself, day after day. When you are ready for a new month, just start all over with a new template sheet.

If not already done, do two things before proceeding further:

1. Take a few minutes to look at the template and become familiar with what's there.
2. Print out the template so you'll have it handy as a reference as we walk through the narrative that explains each section.

How to Use the Report

You'll notice that across the top (from left to right) of the template, each column has a letter of the alphabet highlighted in yellow. This helps identify the area being referred to. This template also has a place in the upper center where we can insert the month and year as we use this template for each new month and year. If you wish to download this template for your use (either as is or to modify), view this article in the ALOA Tech Link app at ALOATechLink.com and click on the link within, or click on this sentence in the digital edition of *Keynotes*. To log into the ALOA Tech Link web app, use your email address registered with ALOA as your user name, and use your member number as your password. Contact editor@aloa.org for assistance.

This template has three main sections: Sales, Cash and Finance (highlighted in yellow), but you can set yours up whatever way best suits your business and purpose. There many ways to structure such a report, but our main purpose is to illustrate and discuss what a typical dashboard report might look like and how such a report would be used. You'll have to decide which data you need to track for your business. Again, be careful, and start smaller if necessary. You can always add more columns

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
DASHBOARD REPORT														
						MONTH ===>	OCTOBER		YEAR===>		2019			
DAY of the month	Sales Volume Dollars Billed	# of Sales Jobs Billed	Open Orders Dollar Backlog	New Quotes Dollars		Daily - Cash Receipts - $$$ - IN	Daily - Cash Disbursements - $$$ - OUT	Daily - $$$ - Net Cash	Cumulative Cash Balance		Daily - Accounts Recievable Balance	Daily - Accounts Payable Balance	Daily - Inventory Balance	Daily - Open Purchases Balance
		SALES					CASH					FINANCE		
						Beginning Balances ==========>			$12,000		$60,000	$40,000	$50,000	$20,000
1	7,750	23	42,000	12,000		2,500	1,200	$1,300	$13,300		65,000	42,000	60,000	18,000
2	6,820	21	51,000	9,000		3,000	5,000	(2,000)	$11,300		68,000	42,150	59,000	21,000
3	11,500	9	45,000	2,500		8,500	6,000	$2,500	$13,800		78,000	45,000	56,000	21,000
4								$-	$13,800					
5								$-	$13,800					
6	14,200	3	56,000	0		4,100	0	$4,100	$17,900		90,000	45,000	52,000	21,000
7								$-	$17,900					
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9								$-	$17,900					
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29								$-	$17,900					
30								$-	$17,900					
31								$-	$17,900					
TOTALS	$40,270	56	N/A	$23,500		$18,100	$12,200	5,900.00	N/A		N/A	N/A	N/A	N/A
Category	Sales	Jobs	Orders	Quotes		$$$ -IN	$$$ - OUT	$$$ - NET	Cash On Hand		A/R-Total	A/P-Total	Inventory	Purchases

Figure 1. Use this spreadsheet as a template for your dashboard report.

later, and you'll want to track data that you can easily find and insert into this report daily. Don't make this too complicated or burdensome for yourself or others!

If we look at Column "A," there's a space for each day of the month, with a maximum of 31 days. To be clear, use these days to represent the calendar day of that month. In other words, Day 5 should reflect the 5th of October in our template. For non-business days (such as a Sunday or holidays), just leave that day blank. Obviously, some months are shorter than others, so not all months will need the full 31 days on the template.

The Sales Section

In **Column "B,"** we record our daily sales, and in this case, we are talking about what was billed or invoiced each day. You'll notice that at the bottom of this column (and some others), there are also formulas to generate a cumulative total for the month. Thus, by inserting your daily numbers, you'll also have monthly totals.

Column "C" is where you can enter the number of jobs billed that day. This should coincide with the sales dollars billed (in column "B") for that same day. This data provides insight into how large or small the billed jobs were. A day with fewer jobs being billed can still generate larger sales dollar amounts if at least some of those jobs were bigger dollars, on average. Just like in column "B," formulas total up the number of jobs for the month at the bottom of the template. Although not built into this particular template, you can use these monthly totals for sales and jobs to calculate the average dollars per job at the end of each month. This will facilitate spotting trends.

Column "D" is a view of our big-picture business backlog, which means how much work we have yet to do (or invoice), although it does not provide specifics such as when the work can be done. As this number shrinks, be sure to generate more new work, or else you will be either paying your people for nothing or sending them home; either alternative is bad. Notice that this column does not have a total at the bottom (N/A = not applicable) because the number is cumulative and represents the latest total for the month, on each line.

Column "E" — New Quote Dollars — tells us of any new quotations, if this is an activity you engage in, for your business. You can either record only bids accepted/won, or you can track all bids tendered. If you are going to track order backlog (column "D"), then tracking only your bids awarded is probably redundant because the value of these bids that you have won should already be included in your open order backlog.

Column "F" is just a spacer column. Of course, if you download the actual spreadsheet template or create your own, you could open/widen this column and use it to track some other data or delete it.

"Just like your medical doctor wants to check your so-called vital signs, it's the same idea with your business."

The Cash Section

Column "G" is Cash In and will track our cash receipts — in other words, any actual cash from sales (such as over the counter or point of sale), plus any checks or even electronic deposits or transfers of cash to us, that we deposited or were credited to us that day. Cash received from customers who owe us money reduces our A/R but increases our cash. When we mark those invoices paid in our accounting software, they are no longer A/R.

Column "H," or Cash Out, is just like it sounds. This tracks our payments or disbursements, which usually means checks that we've written to pay for goods or services that we have purchased or procured. Just like in A/R, when we issue a check to pay a bill/invoice from one of our suppliers (or a utility bill or other business expense), this reduces our A/P and decreases our cash because we no longer owe that money.

Column "I" is Daily Net Cash and, as you might expect, is the difference between our cash that came in and our cash that went out for that day. Yes, the formula in this column calculates the difference between columns "G" and "H."

Column "J" is Cumulative Cash Balance. You will notice at the top of column "G," there is a comment "Beginning Balance," which points over to column "J." When we start over with a new month, we need to carry forward the ending cash balance from the previous month. So, last month's ending cash balance becomes this month's beginning cash balance because this is a running total or cumulative number. This column contains a formula that simply adds the Daily Net Cash (from column "I") to the previous day's total Cumulative Cash Balance. This means that your Cumulative Cash Balance in column "J" will go up, down or remain unchanged, depending on what happened with your net cash each day.

Column "K" is just a spacer column. Of course, if you download the actual spreadsheet template, or create your own, you could elect to open/widen this column and use it to track some other data or could choose to delete it.

The Finance Section

Column "L" is the Daily Accounts Receivable Balance, which tracks how much you're owed on a cumulative basis. Of necessity, this starts with a beginning balance carried forward from the previous month's end, including any month-end adjustments to your A/R. Each time you make a sale that extends credit and you enter this transaction into your accounting system, your A/R is increased by that amount. Conversely, when you collect money owed from your invoices, you reduce your A/R because that customer no longer owes money for that invoice. This column updates each day to reflect the latest cumulative amount of your A/R. However, it does not tell us how old these invoices are, who owes the money or how many invoices are outstanding. Again, you need to run your A/R aging report from your accounting system to get that kind of detail.

Column "M" is your Daily Accounts Payable Balance, which tracks how much you owe others, on a cumulative basis. Of necessity, this also starts with a beginning balance carried forward from the previous month's end, including any month-end adjustments to your A/P. Each time you incur a trade debt obligation (such as make a purchase on credit or receive a utility bill) and then enter this transaction into your accounting system, your A/P is increased by that amount. Conversely, when you pay bills, you reduce your A/P because you no longer owe the money for that invoice. This column updates each day to reflect the latest cumulative amount of your A/P. However, it does not tell us how old these bills are, whom you owe the money to or how many bills/invoices are outstanding. Here again, you need to run your A/P aging report from your accounting system for that information.

Column "N" is your Daily Inventory Balance, which tells you how much money you have tied up in inventory, whether already paid for or not. The portion of your inventory that is unpaid should be reflected in your A/P under column "M" (if you've already been invoiced for it) because you owe that money, along with any other bills you have received but not yet paid. Remember, this does not include anything you've ordered but not yet been billed for, which will appear in column "O." Establish some parameters for the level of inventory that you can afford to have on hand (plus what's on order) because you'll ultimately have to burn some of your precious cash to pay for this stuff.

Column "O" is your Daily Open Purchases Balance, which tells you how much you have on order that you haven't yet been billed/invoiced for. If you have already been invoiced for an order and have entered the bill into your accounting system, then this amount should already be included in the current A/P.

That means you don't want to enter that amount here again.

Note that there aren't totals at the bottom of the template for columns "J" through "O" because those numbers are cumulative and represent the latest total for the month on each line.

Conclusion

As you think about what to include and how to use your dashboard report, keep these considerations in mind:

- Start out small and gradually add more data to track.
- Structure your dashboard report to track what's important to your business.
- Determine if each daily number should be cumulative or totaled at the bottom.
- Recognize that daily numbers tend to reflect peaks and valleys.
- Subtle trends are often more important to notice than daily ups or downs.
- Use monthly averages to spot longer-term trends.
- Post monthly totals to another spreadsheet to capture month-over-month trends.
- Strike a balance between what to track and how time-consuming it is to get the data.
- Expect your dashboard report to only provide a high level of information.
- Use your detail reports (such as A/R and A/P aging) to drill down for answers.
- Create and send out your invoices ASAP after completing the work or shipping.
- Update your dashboard report daily, even if you don't get to look at it every day.
- Leave blank rows for days without business activity, such as Sundays or holidays.
- Use your dashboard report to help develop forecasts and budgets.
- Never, ever, trust or borrow money from exceptionally well-heeled Hobbits, bunnies with dilated pupils or sheep wearing dark sunglasses.

The topic for our next article in this series will be best practices, where we will discuss the value of establishing and employing the best practices concept to your business.

Noel Flynn is a degreed business management consultant with global senior leadership experience, including more than 20 years in manufacturing, wholesale distribution and consulting sectors of the security industry. Noel has been a senior executive, officer, board director and adviser to not-for-profit and for-profit companies in numerous industries worldwide. This includes being an ALOA SPAI board member since 2011, and he is also an ACE instructor, developing and teaching business management. Contact him at nflynn@aloa.org.

Automotive Spotlight QUICK TIP

Doing 90% of my work at an auction has its challenges. You would think most of what I do is make keys to cars. I wish. I can be called for many issues — mostly a car that won't crank/run — but lockouts, bent/broken keys, the key won't start the car, etc. are all part of it.

Recently, I was called out after I got home for the day because a dealer showed up to pick up a car he had bought, and the alarm was going off and the car wouldn't crank/run. The car was a 2020 Kia Soul with a keyed ignition. My first reaction was to pull the door handle cap that covers up the actual lock and turn it both ways. This works on a lot of cars, especially Hyundai and Kia.

This didn't work. I decided to do a hard reset and see if that helped. Nope. I checked the key, and there was no transponder. I looked up the car, and there is no transponder on this model. I decided to scan the car, and there were no codes. After doing all this, I tried to start the car (it's always a subconscious reaction while I'm sitting there thinking). It fired right up, and I was stunned.

Then I realized it must have something to do with the ignition being on for a period of time. Hyundais and Kias, along with many other cars, can be electronically locked for many reasons. Sometimes it's too many wrong PIN codes entered. Sometimes it's because the car was unlocked without a key, like using a long-reach tool. There are a lot of reasons this can happen. After thinking about it for awhile and doing some research, I determined that having the key on for a few minutes while I scanned the car unlocked this one.

Later that night, I found an owner's manual online, and hidden in a place where you would not expect was, "Leave the key on for 30 seconds" to disable the alarm. I guess I was lucky on this day, but this goes to show how some experience and deductive reasoning can save the day. When turning the key in the door didn't work, I was astounded. It always worked on hundreds of others. The phrase, "I learn something new every day" is part of my locksmith life, and I apparently love it.

Brian Suggs has spent more than 30 years in the locksmith industry, concentrating primarily on automotive work, including 15-plus years of auction work. He is a contributor to the Auto Smart Advisor books and app since 2006 and has provided tech support and sales for Abrites and ACDP programming tools. Brian is an industry instructor, teaching classes for several distributors, ALOA and Just Cars. In his spare time, he is a pilot with an instructor rating and is licensed to teach people how to fly.

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- ADD KEY/ALL KEY LOST VIA OBD FOR 2013 - 2020 MODELS GM
- READ IMMO PASSWORD, ADD KEY/ALL KEY LOST UP TO 2020

FORD
- ADD KEY/ALL KEY LOST (NO PIN NEEDED) UP TO 2020

MAZDA
- ADD KEY/ALL KEY LOST (NO PIN NEEDED) UP TO 2020 FCA
- READ IMMO PASSWORD, ADD KEY/ALL KEY LOST UP TO 2020

EXPAND EEPROM FUNCTION INCLUDING 2000 COMPONENT TYPES

RENAULT
- ADD KEY/ALL KEY LOST (NO PIN NEEDED) UP TO 2020

LANDROVER/JAGUAR
- ADD KEY/ALL KEY LOST UP TO 2019

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A Job of Surprises

Craig Bernasconi opens a Chatwood Duplex safe on a job with a few surprises — good and bad.

It is becoming more and more normal to receive an email from a potential customer asking for a price to open a safe. This particular email stated that the potential customer had taken over an old public house (bar) that had been closed for at least 10 years, and of course, nobody had keys for the safe.

He advised me that nothing on the safe identified the model at all, so I asked him to send me photos for me to give him a price. I was not surprised about 10 minutes later when the photo arrived with the word Chatwood clearly written on the key escutcheon — what can I say?

I asked for the safe's location (I have fallen for that trick before), and he told me that it was in a town about an hour's drive from me. It was in a wooden cupboard with limited side access, and it was upstairs. I emailed him back with a price to open and rekey the Chatwood safe, and quickly got the go-ahead.

This interaction still amazes me. I did not — and still haven't — actually spoken to this customer, and this is becoming more common. It's like people don't want to talk to each other these days… it's all very strange to me!

Anyway, back to the job. After being clever and remembering to ask the safe's location, I felt that I had given him a fair

Figure 1. Shown is the Chatwood opponent. Notice the **replacement lock ready to go on the safe.**

Figure 2. The author is about to start aligning the levers with the pick.

Figure 3. The drilled hole and the lock pick are shown.

Figure 4. The safe is opened.

Figure 5. The back door of the safe is shown.

Figure 6. You can see the door thickness here.

price… right up to the moment we (I had one of my guys, Mark, with me) arrived at the pub.

The Nightmare Begins

I don't know what actually gave away the fact that that it was going to be a nightmare, but I suspect it was the 10 white vans that were filling the car park, the temporary fencing all around the pub saying "No Entry," or the few guys wandering around with high-visibility jackets, boots, hard hats etc. Yes, you guessed it: The pub was closed down and being renovated. My heart sank.

I don't know if it is the same where you are, but in the UK on a "building site," you will probably need to have an "induction," which is a talk advising you how not to kill anybody on site, where the toilets are, where you can smoke, etc. The induction can take anywhere from about two minutes (get on with it) up to about two hours (the record for me on

Figure 7. High-vis vests were required on site, as the pub was under construction.

Figure 8. The author removed the guilty engineer's signature.

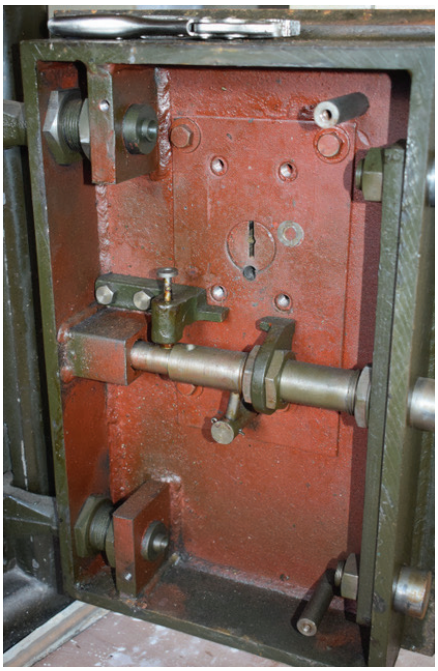

Figure 9. With the lock removed, you can see the drilled hole.

a building site) when the only guy who does the inductions is busy. Never go on a Monday morning!

So, there we were. I had no high-vis jacket with me, as nobody mentioned "building site," and I was not in my own vehicle. Mark, who was driving me in his van, had a spare high-vis jacket, but he is a medium and I am, let us say, XL to be kind. We had no option but for me to squeeze into the medium jacket — I will have to buy him a replacement soon — and go find the site foreman.

Fortunately, after he stopped laughing at me with the now two-piece high-vis jacket, the site foreman lent me a larger size and gave a very brief induction consisting of "the safe is upstairs in the office." Then he let us go on site and get started.

The building site was a 110v site, meaning that my standard 240v magnetic drill base couldn't be used. My 110v magnetic base was back at the office in the same cupboard as my mini rig and such. It appeared that this safe was going to need drilling by hand. Now, isn't that a good start?!

We could have gone back to the office for the correct drilling equipment, but that would have wasted two hours, so off we set upstairs with the battery drill, some new drill bits and hand tools.

A Better Surprise

We found the safe quite easily upstairs in a cupboard. I removed the keyhole escutcheon that had the invisible "Chatwood" written on it, and my heart lifted: The safe had been drilled before!

I suspected (and hoped) correctly that the metal plug that had been drifted into the previously drilled hole would not be hardened. Once we set up the battery drill with a new and sharp high-speed steel drill bit, it only took a little hand pressure and about five minutes to get through the previously drilled hole. This is mainly because the plug fortunately was only about ½" long and made of mild steel.

The safe door was around 1" thick to the lock, so I had plenty of gap after I drilled through the plug in case my drill bit went in a little too far because of drilling by hand.

Once the battery drill had gone through the mild steel plug, I stopped drilling and took out the endoscope with a battery-operated light source. A quick look with the zero-degree scope confirmed that the plug had been defeated and the lock case had also been drilled before — meaning I could see the levers in the lock. I could also see the damage that had been caused to the lock by the previous engineer.

The engineer had drilled a hole straight through the lock case and into the levers. Well, actually, *all* the way through them to be honest, but at least after about 15 minutes of messing around, I could still align the lock's 10 separate lever gates with my screwdriver to get the lock open.

Aligning the Lever Gates

Perhaps I should try to explain at this stage what I mean by align the lever gates. The idea is that you insert a tool or pick

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Figure 10. The lock is shown just after removal.

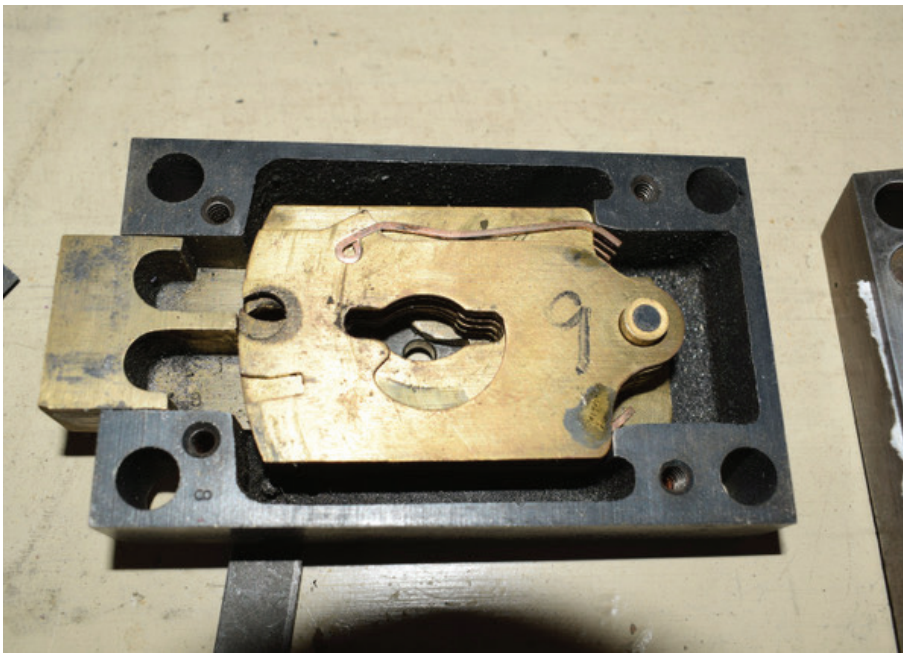


Figure 11. This photo shows the drilled lock.

to lift each lever up and down individually, starting with the lever nearest to you. You can see the lever's "gate" (or gap in the lever, if you prefer) with a scope and feel it with a screwdriver.

After you insert a thin screwdriver through the first lever gate, keep the screwdriver in the gate and proceed using the same technique until you have aligned all the levers in the lock using your thin screwdriver. At the same time, keep all previous levers in position as your screwdriver goes deeper into the levers.

Once aligned, keep a hold of the levers with the screwdriver while putting turning pressure on the lock bolt with your lock pick or similar tool, and then move the lock bolt into the open position. If you have correctly aligned the lever's gates, the lock will open. If not, you may need to jiggle your screwdriver until it does open.

Back to the Job

Going back to our safe, once the lock was opened, turning the handle opened the safe door to reveal the contents that you can see in the photo. I won't tell you what was in the tin, but I bet you can guess!

After removing the back chamber of the safe door, I noticed that the lock had been signed on 15/10/96, (22 years previously) by the engineer who had opened the safe. I have blurred the signature to protect the guilty, as it were. I suspect it was one of those bad day jobs, but you know who you are. I must admit, I wouldn't have signed it if it were me, though!

We had one of our replacement 10-lever Chatwood Double Bitted safe locks with us with two keys to save time. This meant that when we removed the drilled lock, we were able to immediately swap it rather than have to either cut keys on site (a real pain with these locks; allow one or two hours) or take it back to the workshop, cut the keys (still about an hour) and then come back to the site.

Sadly, the levers in the removed lock were so badly damaged that they were not fit to repair. We had to scrap the lock rather than rekey it at our leisure for the next time we need one. This was annoying, because they are becoming quite rare nowadays, but I suppose you can't have an easy opening and a decent lock to rekey on the same day. That would be too much to ask for.

We filled the hole with a couple of tight-fitting ball bearings and metal filler once we had fully tested the safe. It took about 20 minutes to find the site foreman, who was eventually located in the roof space.

We had him test the lock and handed over the new safe keys. After he signed my job sheet, we carried all our tools to the van. At this point, we discovered that somebody had parked his van blocking our path to exit from the car park (well, technically they had blocked everyone's exit). What a shame, I thought, or words to that effect.

The van had a Polish registration mark, so I set off looking for the driver of the unmarked white van in one direction, and Mark set off in another direction. Did I mention that this was a very large pub? Twenty minutes later, we met

Figure 12. The replacement lock is being fitted.

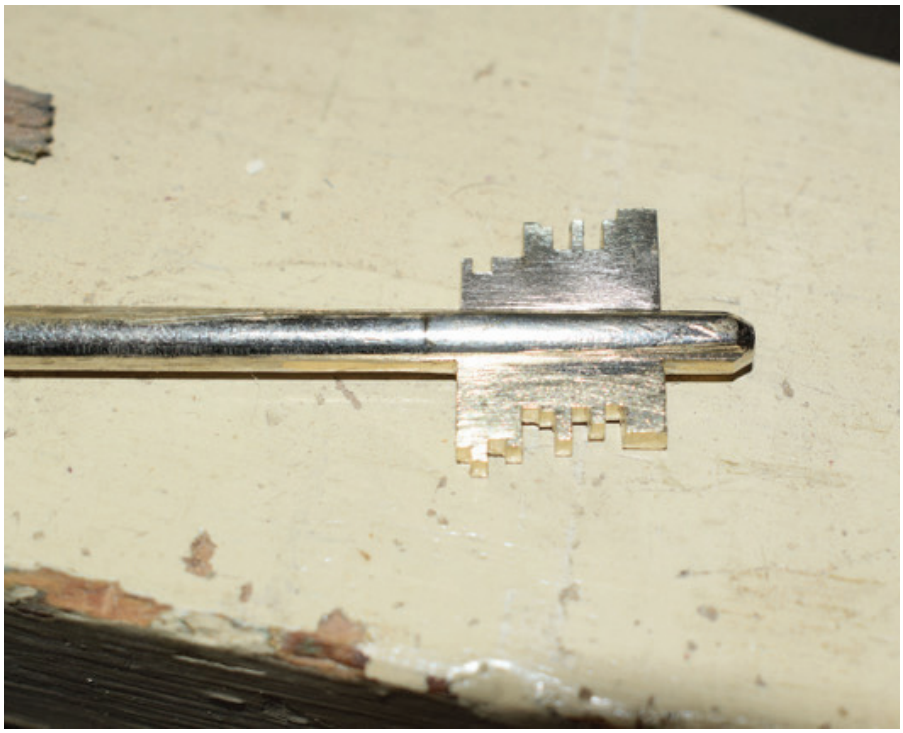


Figure 13. The key for the lock is shown.

back at the van, no wiser as to the van's owner. By now, another rather large guy wanted to escape the car park as well. As we debated moving the van with the forklift truck, five more minutes passed before a guy turned up and nonchalantly moved his van.

To be honest, even though he didn't seem to speak English very well, I suspect he understood the torrent of abuse he received from the builder he had blocked in. At one point, I thought he might be physically assaulted, but the moment passed. I had the camera phone ready for the action just in case.

Once out of the car park, we discussed the damage to the lock and reminisced about the engineer who had butchered the lock. He's still working out there, and I don't want to give you any clues to his identity. But rest assured knowing I will wind him up suitably when I see him next.

I would also like to mention that I have recently discovered that my wife occasionally does read my articles… so hello, my dear!

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.

Schlage BE375

TOUCH DEADBOLT LOCK

Sal Dulcamaro walks you through features and installation.

Recently, I installed a Schlage BE375 deadbolt lock. It's referred to as the "Touch" or keyless touchscreen lock. It was the first time I installed a lock with a digital keypad that didn't also include a keyed bypass lock cylinder. The door was already drilled and prepped for a 2¾" backset (see *Figure 1*).

You'll notice there is a keyed Schlage knob lock on the door. Usually, with a digital lock, I install a passage knob or lever so someone won't accidentally lock the knob and be locked out without a key. The customer wanted the keyed knob so he could lock the knob and someone with only the combination (and not a key) couldn't open the door.

Figure 1. The door was already drilled and prepped for a 2¾" backset.

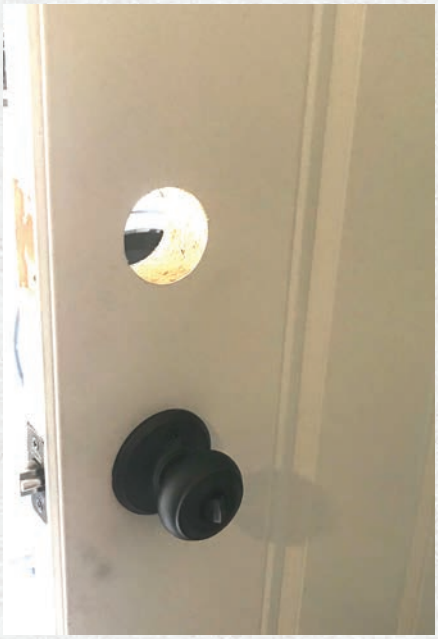


Figure 2. An inside view of the door shows the 2⅛" cross bore hole for the deadbolt lock.

There is something different about current generation Schlage F series keyed knobs. I didn't notice it at first, but when the door is locked and you turn the inside knob, the lock unlocks itself. Earlier generations of the F series had a panic-proof inside handle. If the knob was locked, the inside handle always turned and opened the door. Residential knob locks like Kwikset had a rigid inside knob when locked, and you had to unlock the knob to get out the door. The panic-proof Schlage F series knob let you out without unlocking the knob, but if you didn't remember to unlock the knob, you could unwittingly lock yourself out of the house.

The new version F series knob effectively prevents you from accidentally locking yourself out and actually works well with the digital lock. The trick was if he wanted to use it to lock out the combination lock, he would need to lock the button on the inside handle and pull the door shut without turning the inside knob to avoid unlocking the knob. That way, the key would be needed to unlock the knob. Using the combination would only unlock the deadbolt, still leaving the knob locked. That being the case, this version F series keyed knob lock

"The new version F series knob effectively keeps you from accidentally locking yourself out and actually works well with the digital lock."

can be used in conjunction with a digital lock of this type without a major concern of the knob locking accidentally and preventing entry by code input.

A Closer Look

An inside view of the door shows the 2⅛" cross bore hole for the deadbolt lock (*Figure 2*). The backset of the hole is 2¾". The latch bolt needs to match the backset of the cross-bore hole. Years ago, most residential latches and latch bolts were backset-specific. The latch would usually be either 2⅜" or 2¾" backset. If you had the latch bolt with the wrong backset and already had the cross-bore hole drilled, you were out of luck. You couldn't complete the installation until you found a latch bolt of the correct backset.

Most current-generation residential locks have adjustable backset latches and latch bolts. Like the others, the Schlage Touch deadbolt uses an adjustable latch bolt (*Figure 3*). The latch bolt came out of the package as 2⅜" backset. Twisting and rotating the tube of the latch bolt (*Figure 4*) lengthens the bolt, and after full rotation (*Figure 5*), the backset is now 2¾".

A sticker at the end of the latch bolt (*Figure 6*) indicated that the bolt should

Figure 3. The Schlage Touch deadbolt uses an adjustable latch bolt.

Figure 4

Figure 5

Figures 4 and 5. Twisting and rotating the tube of the latch bolt (*Figure 4*) lengthens the bolt, and after full rotation (*Figure 5*), the backset is now 2¾".

Figure 6. The bolt should not be extended when you start the lock installation.

Figure 7. The retracted bolt is ready to be installed in the edge bore hole.

Figure 8. The latch bolt is in place, and the screws are started.

Figure 9. The outer lock body is shown.

Figure 10. Looking through the cross-bore hole, you can see the holes on each side where the mounting screws will pass through and the slot in the middle that the tailpiece will go through.

not be extended when you start the lock installation. The retracted bolt (*Figure 7*) is ready to be installed in the edge bore hole. The latch bolt is in place and the screws are started (*Figure 8*). While the bolt remains retracted, you can fully tighten the two mounting screws.

The outer lock body (*Figure 9*) has a sticker attached at the top right. I will explain that a bit later. There are two tapped holes to accept the mounting screws, and slightly above those holes are the wires that will connect to the inside lock assembly. The tailpiece is between the two tapped holes and will extend into the slot in the latch bolt and then further into the thumbturn on the inside assembly. Looking through the cross-bore hole (*Figure 10*), you can see the holes on each side where the mounting screws will pass through and the slot in the middle that the tailpiece will go through.

Insert the wires into the hole just

Figure 11. Insert the wires into the hole just above the latch bolt.

Figure 12. The outer lock body is pressed flush against the outer surface of the door.

Figure 13. The wires are extended through the cross-bore hole sticking out on the inside of the door.

Figure 14. The sticker shows the position the thumbturn needs to be during installation.

Figure 15. There is a small rectangular hole in the plate through which the wires will be extended.

Figure 16. The wires have been guided through the rectangular hole.

above the latch bolt (*Figure 11*). Guide the tailpiece into the slot hole, and then the outer lock body can be pressed flush against the outer surface of the door (*Figure 12*).

With the outer lock body in place, you have the wires extended through the cross-bore hole sticking out on the inside of the door (*Figure 13*). The inside assembly also has a sticker attached (*Figure 14*) that shows the position the thumbturn needs to be during installation. It should be vertical, with the wide end of the thumbturn toward the bottom. There is a small rectangular hole in the plate (*Figure 15*) through which the wires will be extended. The wires have been guided through the rectangular hole in *Figure 16*, and the thumbturn remains vertical, ready to guide the slot of the thumbturn over the protruding tailpiece.

The inner assembly has been positioned over the tailpiece (*Figure 17*), and the wires from each side are ready

Figure 17. The inner assembly has been positioned over the tailpiece.

Figure 18. The wire connection has been made, and the two mounting screws are being attached.

Figure 19. The screw on the left is being fully tightened.

Figure 20

Figure 21

Figures 20 and 21. The author attached the included 9-volt battery (*Figure 20*) and left it hanging (*Figure 21*).

Figure 22. The lock is ready to test.

to be connected. The wire connection has been made in *Figure 18*, and the two mounting screws are being attached. The screw on the right is almost fully tightened, and the screw on the left only partially. The screw on the left is being fully tightened in *Figure 19*. Make sure that the plates on each side are straight and not tilted before fully tightening both screws.

Now it's time to attach the included 9-volt battery (*Figure 20*). I attached the battery (*Figure 21*) and left it hanging. The wires and battery need to be positioned to fit under the cover plate that goes on the inside of the lock assembly. I tested the lock and battery first before attaching the inside cover plate.

The lock is ready to test (*Figure 22*). The latch bolt was installed without being extended, per the instructions on the sticker at the end of the latch bolt. The Schlage Touch deadbolt can be locked from the outside without knowing the code. You only need the code to unlock it from the outside. The battery (and therefore the power) is attached and can be tested to make sure the installation was done correctly. To lock the Schlage Touch from the outside, touch the "Schlage" button at the top of the lock (*Figure 23*). After you touch the "Schlage" button, the LED should light

Figure 23. To lock the Schlage Touch from the outside, touch the "Schlage" button at the top of the lock.

Figure 24. After you touch the "Schlage" button, the LED should light up.

Figure 25. When you turn the exterior thumbturn, the bolt should extend.

Figures 26-28. Once you get it to lock properly, you should probably be able to position the battery and wires on the inside (*Figure 26*) and slide the cover plate in place (*Figure 27*) to complete the installation and cover the wires and batteries (*Figure 28*).

up (*Figure 24*), and when you turn the exterior thumbturn (*Figure 25*), the bolt should extend, as shown.

If the Schlage Touch locks properly when testing, the lock was probably installed correctly. If it doesn't lock, you probably installed it wrong or you have a defective lock. Check the installation. Once you get it to lock properly, you should probably be able to position the battery and wires on the inside (*Figure 26*) and slide the cover plate in place (*Figure 27*) to complete the installation and cover the wires and batteries (*Figure 28*).

Programming the Schlage Touch

Once the lock is installed, you can program your codes. The keypad has 10 digits numbered from 1 to 0 (*Figure 29*). The "Schlage" button is at the top of the lock, and the outside thumbturn spins freely if you aren't locking the bolt or unlocking it with a proper user code. You can actually test user codes before you even program the lock. Each new Schlage Touch lock comes with a pre-programmed six-digit programming code. There are also two pre-programmed user codes. You can test the unlocking operation of the lock using one of the built-in user codes before you even try to program your own codes. Those three codes will be on a sticker attached to

Figure 29. The keypad has 10 digits numbered from 1 to 0.

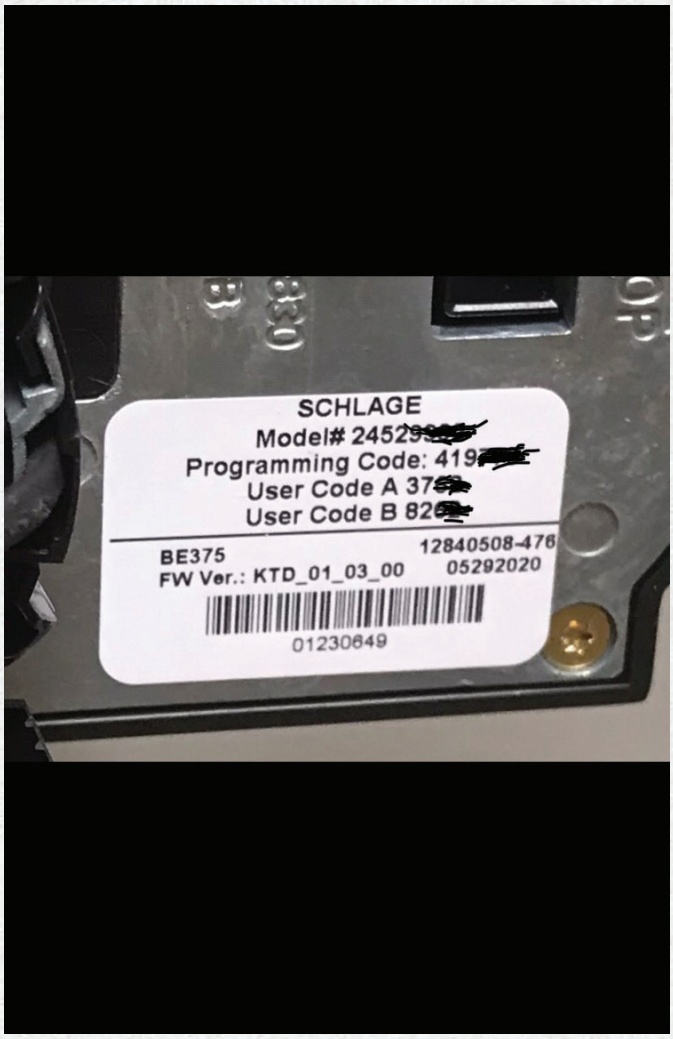


Figure 30. A second sticker, identical to the one on the instruction sheet, is located on the inside surface of the outer locking unit.

your installation instructions and will be unique to each Schlage Touch. There is no single set of three matching codes that are common to all Schlage Touch locks. That means that you can use the built-in codes without worrying that someone with the same type of lock can use their codes to open the door.

A second sticker, identical to the one on the instruction sheet, is located on the inside surface of the outer locking unit (*Figure 30*). You have a few options for codes. You could use either or both of the two built-in user codes that are printed on that sticker.

People often prefer a code that they can easily remember. The programming code is always six digits, and the user codes are always four digits. You could keep the existing programming code since they likely won't be used often, and it will be printed on the sticker in case it's forgotten. You can also keep the two existing user codes since they are also on the sticker, and you could add extra codes of your own.

The advantage of using the codes on the sticker is having backup information if you don't use the lock for a while and forget and/or lose your code information. Even if you don't use the two built-in user codes, they'd still work if you forgot the new user code you programmed.

If you choose to, you can change both the programming code and all user codes. Just remember that you need to know the existing programming code to change, add or delete any codes. Programming the lock or finding instructional videos online is illustrated in the printed instructions (*Figure 31*).

Emergency Bypass

At the bottom, just below the illustrated programming instructions (*Figure 31*),

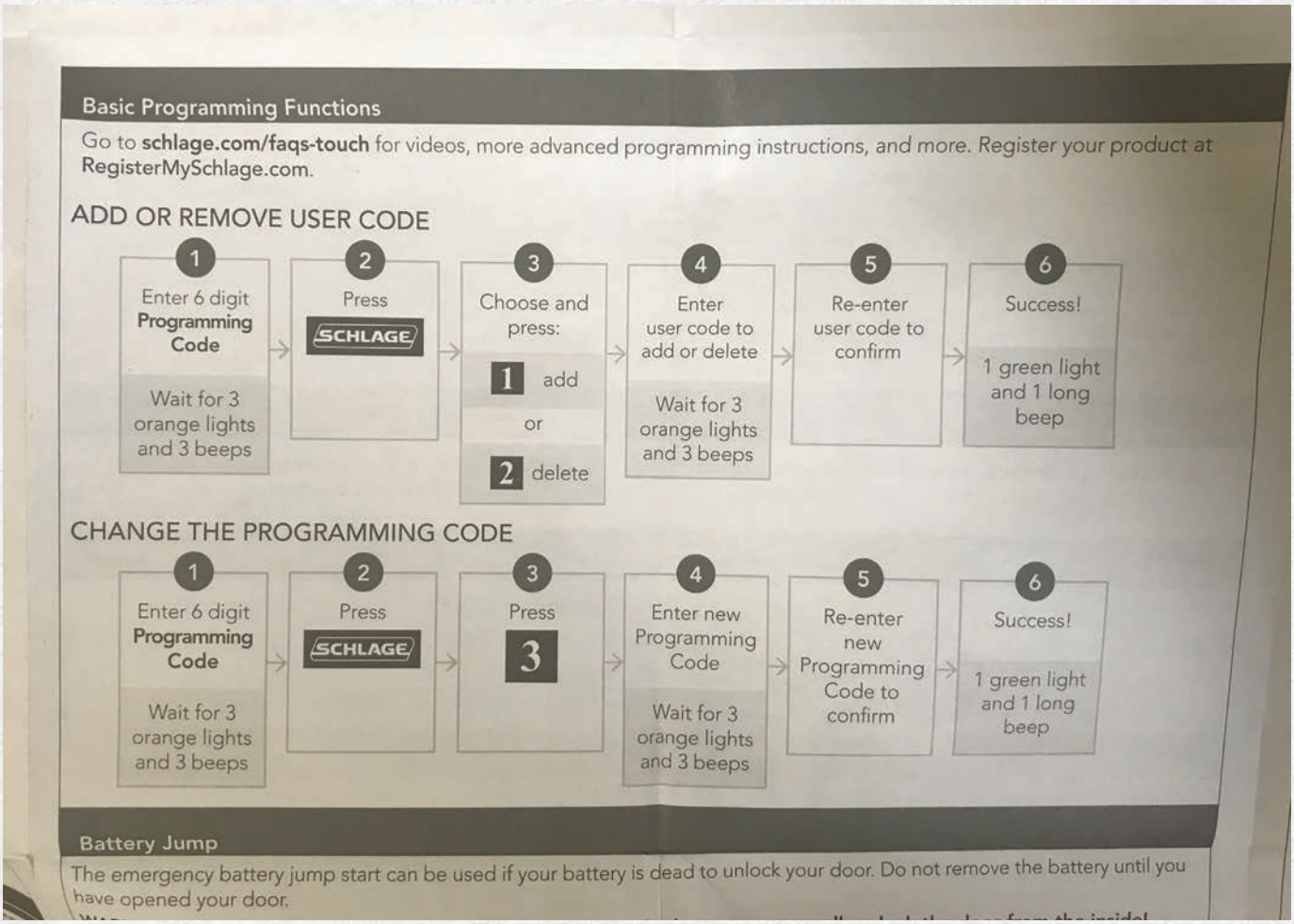


Figure 31. Programming the lock or finding instructional videos online is illustrated in the printed instructions.

you'll see a caption that says, "battery jump." In the past, most digital locks that I encountered had a mechanical key bypass. If the battery died or if the code wasn't working, you had the option of picking the lock.

The "battery jump" is actually designed more for the homeowner. On locks with keyed bypass, the homeowners could use the mechanical key to open the lock if they waited too long to replace the battery and it went dead. If the battery goes dead on a Schlage Touch lock, there are two external battery contacts on the outer lock body just below the exterior thumbturn.

The process wouldn't be much different than if your car battery goes dead and you need it "jumped." If your battery goes dead on the lock, you can connect a 9-volt battery to the external battery contacts below the thumbturn. All that does is replace the power that would otherwise come from the battery on the inside that has gone dead. You would just enter the normal user code to unlock the door and then (if you're wise) replace the dead 9-volt battery on the inside. If you don't, keep a spare battery until you do replace it.

This bypass method only works for dead batteries. Just as with a dead battery, adding power only solves your problem if you have a working ignition key. If your Schlage Touch is malfunctioning or you don't know the user code, just having backup power won't get you in. Back in December 2016, *Keynotes* published an article that showed a way to bypass this same lock when the problem isn't just a dead battery. You may want to check your archives if you're interested in finding out how.

Sal Dulcamaro started out in locksmithing in 1975 at age 17. He first practiced as a commercial locksmith before becoming an institutional locksmith in May 2014 for a large hospital. He has been a technical writer for more than 30 years, with more than 300 magazine articles published. He previously served as a contributing editor and a technical editor for Reed's Security Reporter.

INSTALLING AN RCI 12 COMPACT STRIKE

Rick Karas installs a new lock and strike as part of an electronic access control job.

A recent project I was a part of involved a condominium association upgrading the access control system on its property. My part of the project involved a door and its hardware. The door that I was asked to work on had a Trilogy PL3000 lock and led to a laundry/workout room used by all of the condominium owners. The property management company asked me to replace the PL3000 with a new lock and an electric strike. Separately, an access control company was installing the card reader and control panel.

Assessing the Job

The property manager was very stern and adamant that she didn't want any more holes in the door after the job was completed. I assured her that there would be none.

When looking at the installation of the existing lock, I understood her concern. The existing installation was a little sketchy, as you can see from the top of the PL3000 (*see Figure 1*). Whoever installed the existing lock used a plate to cover the hole. Unfortunately, this left a gap at the top of the lock where water, debris and insects could enter. There was another plate on the other side of the door as well. It certainly wasn't an ideal solution, but I have seen worse.

I took a look at the door and the doorframe. I was expecting to see an ANSI strike plate, but noticed that the doorframe had a T-strike plate (*Figure 3*). When I saw the T-strike plate, I decided that a compact electric strike would be a good choice and, in particular, the RCI 12C electric strike (*Figure 4*).

After I'd decided on the electric strike, it was time to figure out how to cover up the holes in the door after I removed the PL3000 and that homemade filler plate (*Figure 2*). To take care of any holes that would remain, I decided to use stainless steel remodeler's plates on each side of the door. This would achieve a clean look and cover any holes in the door.

Figure 1. The existing installation was a little sketchy.

Figure 2. Whoever installed the existing lock used a plate to cover the hole.

Figure 3. The doorframe had a T-strike plate.

Figure 4. The electric strike is in its packaging.

Figure 5. Quite a few locks had been installed on the door over time.

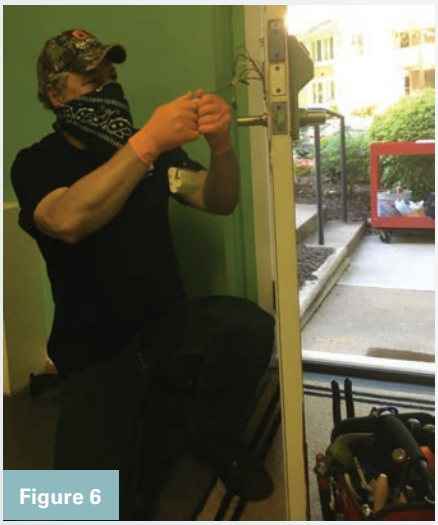
The remodeler's plates that I used for this project were Don-Jo MFG stainless steel remodeler plates with a 3½" width x 15" height. The lock was simply a storeroom function lever lockset. Following is how the project went.

Door Latch and Strike Plate Alignment

1. I checked the alignment of the current lock's latch and strike plate to see if the alignment was off. To my surprise, they were aligned fairly well.
2. Second, I checked the door's hinges to make sure there were no existing problems such as being loose, stripped, bent, broken or bound or missing screws. All good here!
3. Third, I checked the door alignment in relationship to the doorframe and reveal. The fit was not bad. It seemed to fit in the frame and was working well. However, I could tell that the door had definitely come from somewhere else and was not the original door that came with the doorframe.

Installation - Under the lock

Time to start the work. I was wondering what I'd find behind the PL3000 once I removed it from the door. I could tell by looking at the latch side of the door that quite a few locks had been installed on the



Figures 6 and 7. The author hoped for no surprises once he removed the lock from the door.

Figure 8. The remodeler's plate covered all of the holes in the door.

Figure 9. The remodeler's plate had to be opened up just a tiny bit for the through-bolts to go through it.

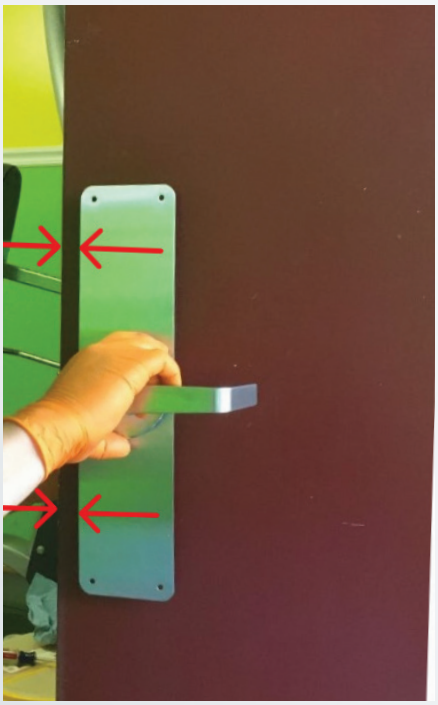


Figure 10. You can see the larger gap at the bottom.

door over time (*Figure 5*). I was concerned that the door would be all chopped up and riddled with holes.

I was hoping for no surprises once I removed the lock from the door (*Figures 6* and *7*). After removing the lock, I found that the door wasn't as bad as I'd imagined. The through-bolt holes had been drilled a little off, but that wasn't a big deal and was easily corrected.

Remodeler's Plates, Lock and Alignment

Next, I took the remodeler's plate and held it up to the door to ensure that it would cover all of the holes in the door. I was pretty sure it would, and it did (*Figure 8*). I test fit the lever lockset with the remodeler's plate and the holes in the door. I found that the remodeler's plate had to be opened up just a tiny bit for the through-bolts to go through it (*Figure 9*). Using my Dremel, I was able to slightly open up the through-bolt holes. I didn't have to trim the holes out much: only about ⅛" out of each hole. The remodeler's plates are made from stainless steel, and even trimming ⅛" heated them up quickly, and it didn't cut very well — especially with a worn-out cutting bit. However, it did the job. I was going to throw that cutting bit out anyway… and I did!

After everything was complete with the through-bolt holes, I installed the storeroom lever lockset and both the interior and exterior remodeler's plates. However, I didn't install the screws into the remodeler's plates just yet, and there was a very good reason: I wanted to ensure I achieved a professional end look (I realize that I may be a bit of a perfectionist when it comes to my work).

First, I closed the door and stood outside of it to look at the remodeler's plate. I could immediately tell that it wasn't parallel with the doorframe. Forgetting

to check this can leave the remodeler's plate looking crooked and sloppy when finished — in other words, very unprofessional. I measured the distance from both the top and the bottom of the remodeler's plate and the doorjamb. As you can see in the photos, the distances were slightly off.

Look at the red arrows in *Figure 10*, and you can see the larger gap at the bottom. Once the distances were the same (*Figure 11*), I installed the screws in the remodeler's plate (*Figure 12*). Before installation, I used my center punch to center each screw (*Figure 13*) and then used a pilot bit to pre-drill the screw holes (*Figure 14*). I know that this may sound like no big deal, but I've found that if I install the screws without using a center punch and pre-drilling a pilot hole, two things will almost certainly happen. First, if I didn't center punch in the center, then it's almost guaranteed that the screw will never be exactly in the center and will pull the remodeler's plate either up, down or to the left or the right. This results in a

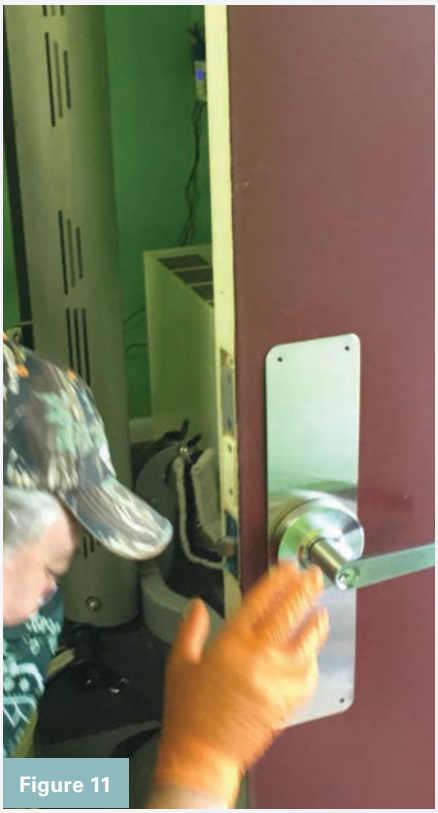


Figure 11


Figure 12

Figures 11 and 12. Once the distances between the lines were the same (*Figure 11*), the author installed the screws in the remodeler's plate (*Figure 12*).

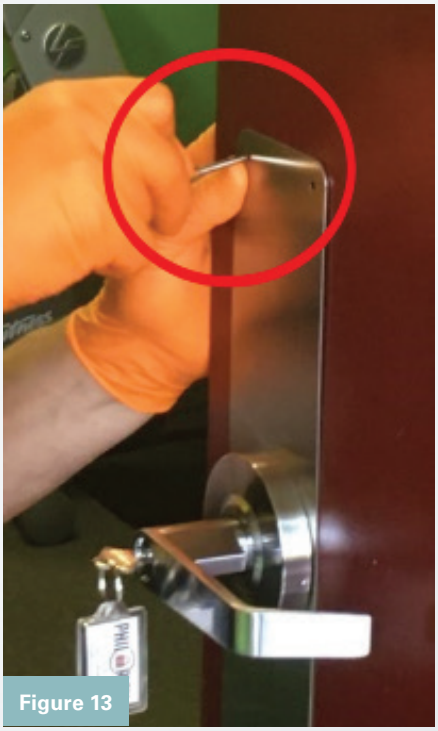


Figure 13

Figure 14

Figures 13 and 14. Before installation, the author used his center punch to center each screw (*Figure 13*) and then used a pilot bit to pre-drill the screw holes (*Figure 14*).

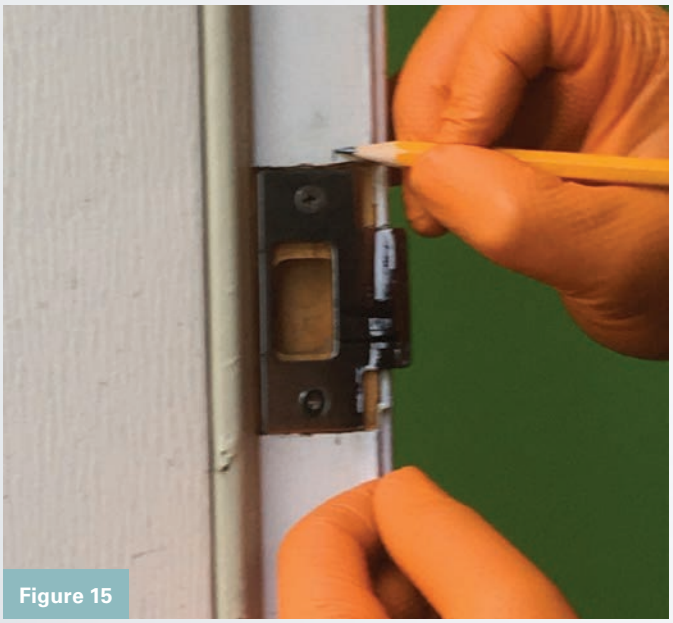


Figure 15

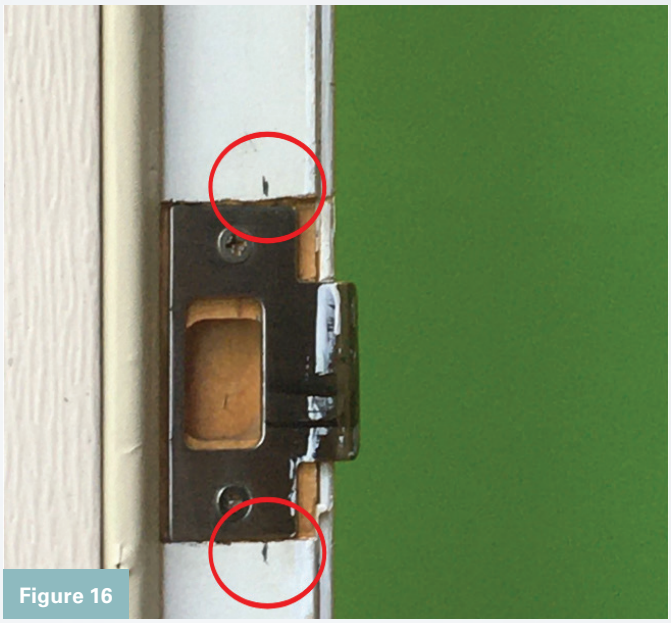


Figure 16

Figures 15 and 16. The author marked with a pencil above and below the T-strike plate.

Figure 17. The RCI 12C compact electric strike has a measurement of 1 13⁄16" W x 2¾" H x 1⅛" D.

crooked remodeler's plate, and the job will look very unprofessional.

Second, if I don't pre-drill with a pilot hole before installing the screws, there's a good chance that the head of the screw may break off during installation. For some reason, the screws seem to always be very weak between the head of the screw and the shank, and over-torquing the screw with a drill or power driver will almost always guarantee that the head will break off, leaving me in a pinch and the shank of the screw in the door without a screw head.

I've found that even though it may be a little slower, it's best to install the screws by hand as not to over-torque them and break the heads off. After doing a few of these with an old-fashioned handheld screwdriver, you'll get a feel for when the head is about to break.

For those reasons, I always use my center punch and pre-drill with a small pilot hole when I install remodeler's plates. I know that was a long explanation. However, it's very important, especially if you have never installed a remodeler's plate before.

The Electric Strike (RCI 12C)

The lock and the remodeler's plates are now installed, so it's time for the electric strike. While inside the room with the door closed, I took a good look at where the latch was engaging into the T-strike plate. I marked with my pencil above and below (*Figures 15* and *16*). Then I did it again to double check. You know what they say: "Measure twice, and cut once." I did this so I would know exactly where (how far in toward the door stop) I should install the electric strike. I wanted to make sure that there would be no pre-load on the electric strike; that's to say, when the door latch is forced against the strike keeper. It's important to make sure that there won't be pre-load on the RCI 12C, as it won't function properly.The RCI 12C compact electric strike has a measurement of 1 13⁄16" W x 2¾" H x 1⅛" D and is made for this type of situation (*Figure 17*). It's essential to get this part exactly right.

I took the 12C electric strike, measured it and transferred the measurements to the doorframe using my carpenter's square (*Figure 18*). Then I measured again to double check. After doing this, I held the electric strike up to the doorframe

Figure 18. The author measured the 12C electric strike and transferred the measurements to the doorframe using a carpenter's square.

Figure 19. The author held the electric strike up to the doorframe with his markings to visually check the measurements again.

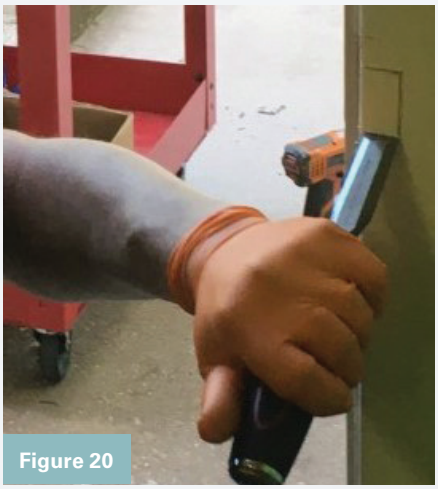


Figure 20

Figure 21

Figures 20 and 21. To make the cutout for the electric strike, the author used both wood chisels (*Figure 20*) and his electric file to clean things up (*Figure 21*).

with my markings to visually check again (*Figure 19*). I know, it's a lot of checking, but believe me that it's definitely worth it.

Once I felt comfortable that everything seemed OK, I made the cutout for the electric strike. To make it, I used both wood chisels (*Figure 20*) and my electric file to clean things up (*Figure 21*). This is the part where time is well spent. It's better to go a little slower and take your time and get the cutout exactly right.

Once the cutout in the doorframe was completed, I drilled pilot holes and installed 3" countersunk wood screws to make sure that the 12C wouldn't go anywhere. Prior to installing the screw, I put a little dab of Gorilla wood glue on the screws. Just a quick mention to say that the 3" screws didn't come with the 12C electric strike; I got them out of my service kit. I was concerned that the little screws that came with the strike would not be adequate for this installation. The longer screws allowed me to attach to the 2x4 jack and king studs that were in the wall behind the strike, thus making sure that the 12C was very secure.

Figure 22

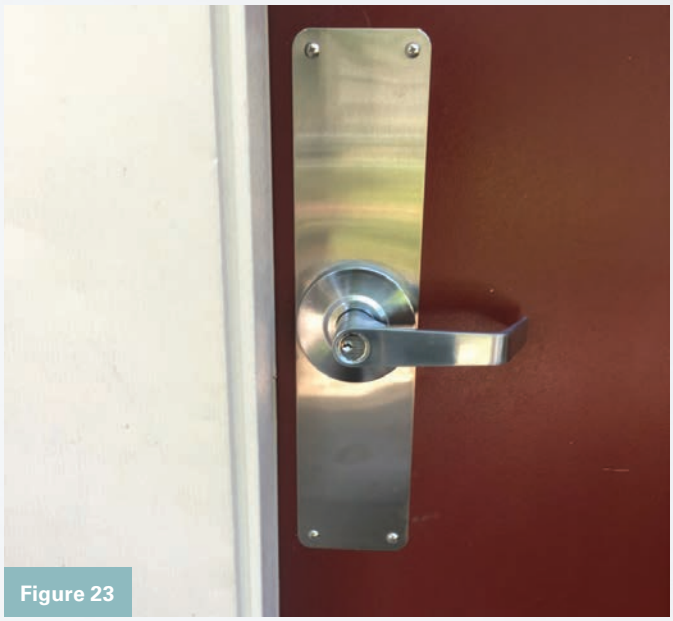


Figure 23

Figures 22 and 23. Everything is installed.

Figure 24. This power test kit is made from an old Securitron PB-2 and a Securitron plug-in 12-volt DC transformer.

Test and Move On

With everything installed (*Figures 22 and 23*) — including the lever lockset, the remodeler's plates and the electric strike — I hooked up a temporary 12-volt DC transformer and a momentary on/off switch to the 12C electric strike to test and confirm that everything was working properly.

A while back, I made a little power test kit from an old Securitron PB-2 and a Securitron plug-in 12-volt DC transformer. I use it to test electric strikes and mag locks. It comes in very handy and has served me well (*Figure 24*). I stood inside the room and closed the door. Then I held the push button (momentarily) to energize the electric strike. I confirmed that everything was working smoothly and that there was no pre-load or bind. Once I knew everything was working, I had the property manager repeat the test. I had her push the PB-2 and unlock the electric strike. That way she knew 100% that everything was working how it should. Then I got her autograph to sign off on the job. I was pretty happy with how the installation went and how nice that little RCI 12C operated. Even more important, my client was happy too.

Rick Karas, RL 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 a commercial and institutional settings. Rick owns Phil-Rich Lock, which serves the Washington, D.C., metropolitan area.

ALOA

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Business Name _____

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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?_____

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❑ **Institutional**
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❑ Investigative
❑ Other _____

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Business License #_____ EIN # _____

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: _____

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Name_____ Company_____ Phone Number_____

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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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Persons actively engaged in the locksmith/access control industry for a minimum of two years and have achieved one of ALOA's recognized program designations.

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❑ International	$270	❑ I elect to Go Green	$200

International Association of Investigative Locksmiths Membership
Must be an ALOA Member in order to join the IAIL.

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Probationary Membership
Persons undergoing training to qualify as an Active member, who have not received one of ALOA's recognized program designations. No person shall be a probationary member for more than three years.

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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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Israel, Korea, Papua New Guinea, Saudi Arabia, United Arab Emirates $360
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FINAL CHECKLIST

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❑ Annual Dues Amount _____
❑ Application Fee _____
Total Amount Due _____

METHOD OF PAYMENT

❑ Check ❑ MasterCard ❑ Visa ❑ American Express ❑ Discover

Card Number_____ Expiration Date_____ SEC_____

Print Name on Card _____

Signature_____ Date_____

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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The Missing Template and the EZ

Tony Wiersielis, CPL, CFDI, walks you through a retrofit of a PHI panic device.

This month I've got another retrofit I did recently at a school district in northwestern New Jersey. This time, it involved removing the existing key operation-only trim (see *Figure 1*) on a PHI panic device and replacing it with a BEST EZ keypad trim (*Figure 2*). This was done because the customer wanted push-button access rather than using a key.

If you aren't familiar with the EZ keypad, here's a little background information. It's available as a panic bar trim and also as a complete lockset using the BEST 45H mortise or 9K cylindrical locks. It delivers simple, standalone access control via the numeric keypad and includes a key override. PINs can be from four to six digits, and there can be multiple individual pins and hierarchy options. All programming is done through the keypad, with no disassembly. What this will not do is offer any kind of audit trail.

The How-To

Figure 3 shows the back of the trim. I've already installed the old cylinder in it. The long piece projecting out of the bottom of the slot is the finger lift, which passes through the door. It engages the head of the panic device and, when the handle of the trim is depressed, it lifts and withdraws the latch. In this instance, it's a PHI rim device.

Figure 4 shows me holding the trim against the door and lining up the posts/studs with the existing holes in the door. You can see the existing four holes for


Figure 1

Figure 2

Figures 1 and 2. The author did a retrofit job removing the existing key operation-only trim (*Figure 1*) on a PHI panic device and replacing it with a BEST EZ keypad trim (*Figure 2*).

Figure 3. This photo shows the back of the trim.

Figure 4. The author is holding the trim against the door and lining up the posts/studs with the existing holes in the door.

Figure 5. The series of shallow drilled holes are shown.

Figure 6. The new-generation Morse hole saw was used.

Figure 7. Just below the threads, you can see a rubber "O" ring.

Figure 8. The author is holding the trim against the door and partially in the existing holes.

the bottom and middle pair of studs, but none for the top pair. Those studs are for the battery bracket that will be above the head of the panic bar on the inside of the door. At this point, I had already drilled the four pilot holes you see near the finger lift.

Figure 5 shows the series of shallow holes I drilled. For the newbies, you want to drill overlapping holes if you use hole saws or spade bits. Make sure you don't obliterate the next pilot hole down because you went too deep with either tool. Don't forget to drill from both sides to avoid splintering the door.

Figure 6 shows the new-generation Morse hole saw I used. You can see the separations between the waste wood to give you an idea of the depth of each cut. I have to say that I miss the fixed arbor hole saws, but in the new version, it's much easier to clear the waste out of the saw.

A Quick Tip

If you use a brand of hole saw similar to mine, you probably have had a hard time unscrewing the smaller saws when you're done using them. The torque involved in cutting with them really tightens them down. This isn't usually an issue with larger saws because they use metal pins that slide into the saw once it's screwed on. With those, you want to back the saw off ½ a turn from tight so it doesn't over-tighten.

Take a close look at the mandrel in *Figure 7*. Just below the threads, you can see a rubber "O" ring. You can get an assortment of these cheap at Harbor Freight. If you do this, you'll never struggle with this issue again. As much as I'd love to say I thought of this, I called Milwaukee directly, and they told me many tradesmen use this trick.

A Missing Template

One of the issues with this installation was that the template wasn't in the box. I had to eyeball some of the hole locations. In *Figure 8*, I'm holding the trim against the door and partially in the existing holes. I traced around the posts with a pencil, which you can see if you

look closely at *Figure 9*. Because the trim was canted, I had to compensate when I snap-punched the door.

Figure 10 shows the completed holes. The larger one on the right allows the battery cable to pass through the door. *Figures 11* and *12* show the wire and how I positioned it to pass through without pinching it when the screws were tightened. *Figure 13* shows the battery bracket screwed into the top two posts and the battery connector. In *Figure 14*, the two smaller screws are used for the bracket.

Figure 15 provides a view of the trim just below the bracket. At this point, the trim is held on by the screws through the bracket. This made it easier to reinstall the panic bar because I didn't need to hold the trim on the door and simultaneously place the bar and try to screw it on.

Figure 16 shows the top of the head of the bar. The red arrow points to the part through which the tailpiece of the cylinder passes. When the key is turned, that part turns and lifts the slide (black arrow) up to retract the latch. This bar is set up for storeroom function, which is required when using this trim.

Figure 9. The author traced around the posts with a pencil.

Figure 10. The holes are complete.

Figure 11

Figure 12

Figures 11 and 12. The wire is positioned it to pass through without pinching it when the screws were tightened.

Classroom Function Setup

Now I'm going to show you, based on *Figure 16* again, how you might find this bar set up for classroom function. I'm doing this so you see the difference and understand why you can't leave it in classroom function with this or any kind of active trim.

For the newbies, what I mean by "active" is that on this type of trim, turning a knob or lever will retract the latch/vertical rods on a panic bar. The opposite would be a dummy or inactive trim that never moves and is used only to pull an unlocked door open or to match trim on one of a pair of doors.

Look at the blue arrow in *Figure 16*. This piece moves from side to side. As you see it, this piece is positioned so as not to block the slide (black arrow) from moving up and down, allowing the lever to retract the latch. If it was moved to the right, the slide couldn't move, and the lever wouldn't turn. It's critical in storeroom function to make sure that this piece does not block the slide.

How can you tell if the bar is set up as classroom function? The part with the red arrow will be inverted 180 degrees (facing up instead of down) and will fit in the slot you see on the piece with the blue arrow. If you turn the key in one direction, you'll block the slide from moving, locking the door. Turn it the other way

Figure 13. The battery bracket is screwed into the top two posts. The battery connector is visible to the left.

Figure 14. The two smaller screws are used for the bracket.

Figure 15. The trim is viewed just below the bracket.

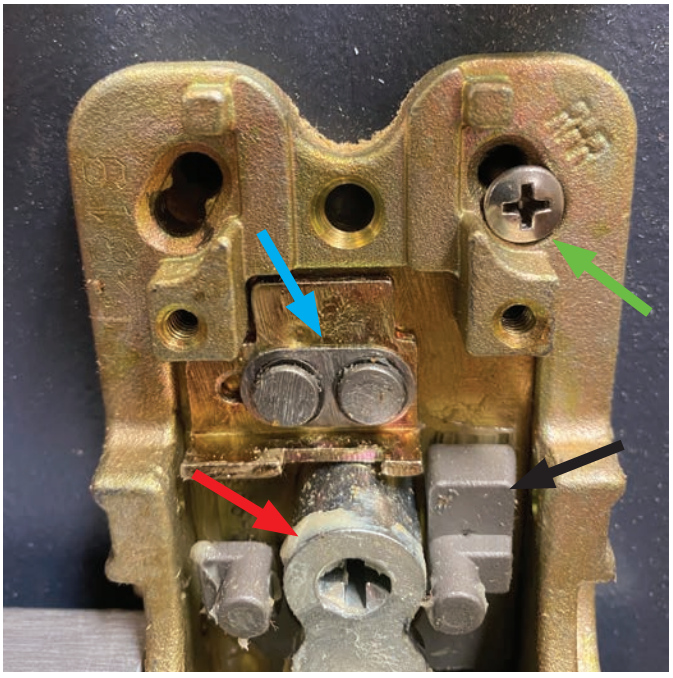


Figure 16. The red arrow points to the part through which the tailpiece of the cylinder passes, and the black arrow points to the slide.

Figure 17. The bar is replaced.

and you'll unblock the slide and unlock the door.

It's a really bad idea to set up the bar as classroom function when using this trim. This is because the trim in this case determines whether the door locks or unlocks. The cylinder is just an override. If someone uses a key for some reason, there's a possibility that they may inadvertently leave the bar in the locked position. If so, the trim will allow access but the lever won't turn because the *slide* is locked. This is a recipe for callbacks and embarrassment.

One last thing in *Figure 16* is the position of the screw (green arrow). The reason the hole for the screw looks like a slanted figure eight is because PHI panic devices can be used with Von Duprin trims. The wider screw holes are for PHI, and the narrower ones are for Von Duprin. Some PHI trims will also work with Von Duprin bars as well. You'll also see near the screw in the photo the letters RHR for "right hand reverse."

Figure 17 shows the bar replaced. *Figures 18-20* show the battery in place

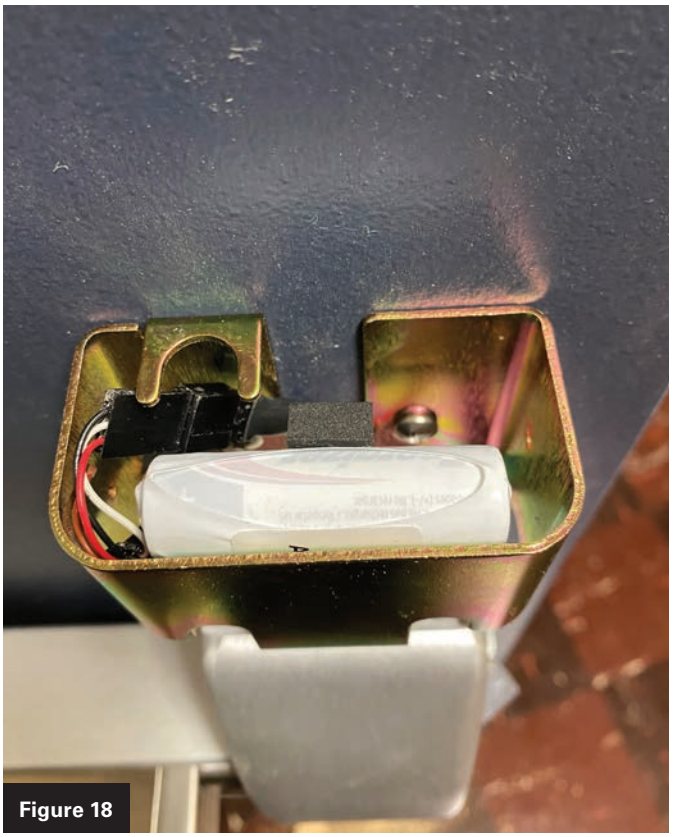


Figure 18

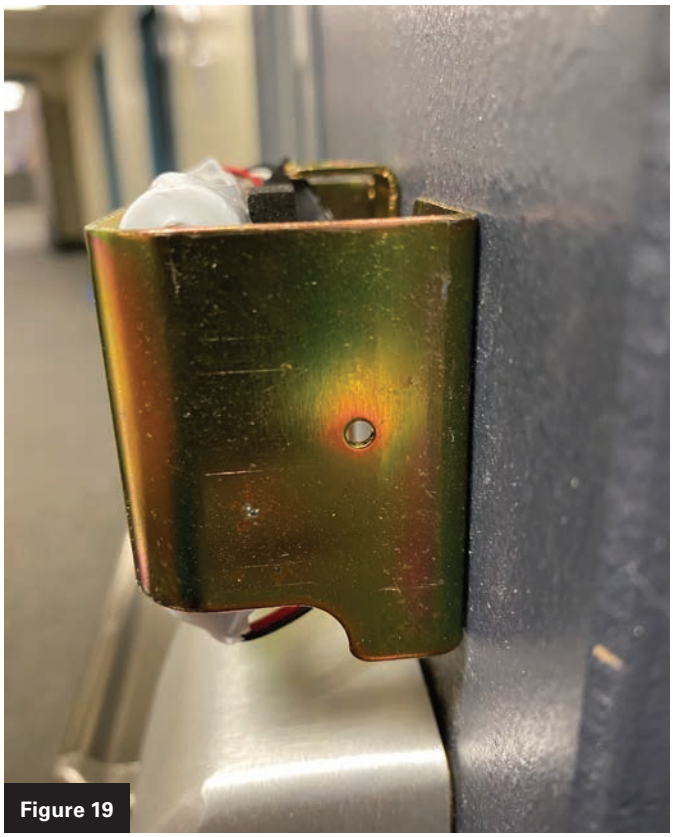


Figure 19

and the screw holes for the battery cover in the bracket. Notice that one hole is closer to the door than the other. You'll see the same on the plastic cover; it only goes on one way.

Figure 21 shows the hole from the old trim. In *Figure 22*, I'm holding the old, longer screw that I didn't use, the old finish washer plus a shorter ¼-20 screw and a door closer sexbolt. In *Figures 23* and *24*, you can see how I used these to fill the bottom hole as well as the completed installation.

The way I used the sexbolt to solve a problem is an example of why you shouldn't throw away excess parts. The sexbolt was left over from a closer installation that didn't require them. I'm not saying you need to save every one you get; I think I've got three or four packs of four bolts in my stash, and having some at this job saved the day.

Here are a few other new, leftover

Figure 20

Figures 18-20. The battery is in place, and the screw holes for the battery cover are in the bracket.

Figure 21. The hole is from the old trim.

Figure 22. The author is holding the old, longer screw that he didn't use, the old finish washer plus a shorter ¼-20 screw and a door closer sexbolt.

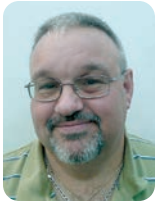
Figure 23

Figure 24

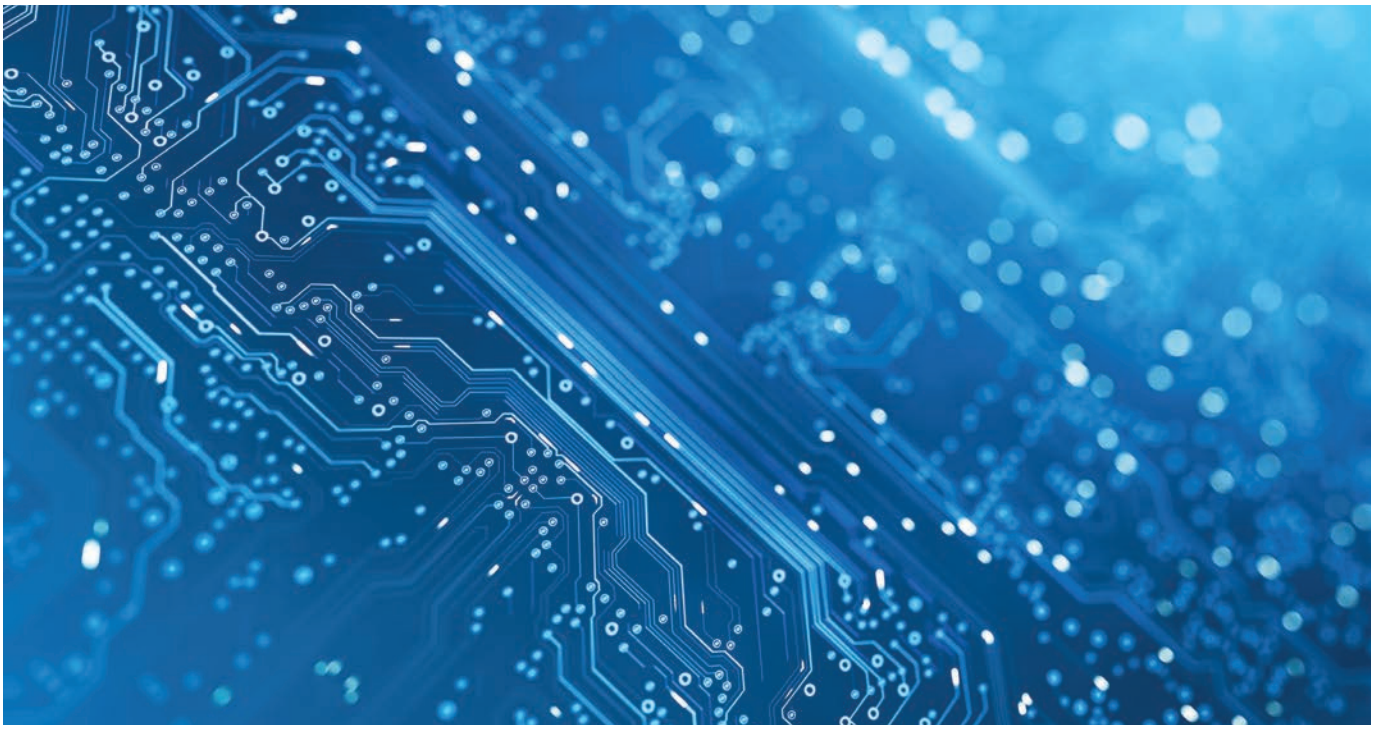
Figures 23 and 24. The completed installation is shown.

parts you might want to hang onto: strikes of all kinds, if you reuse the existing; panic bar strike shims; plastic dust boxes, cylinder rings and collars; BEST throw members and black plastic temp thumbturns; unused screw packs from all types of locks you regularly install... you get the idea. You never know when you might open a new lock and find no screws.

One last thought about that bottom hole fix I did: The guy in charge of that building was fine with it. The fact is, nobody is paying any attention to that screw and sexbolt, but some people might notice the empty hole. If, for example, you install a new door closer on a metal door and find that some of the old holes are visible, tap them and put in pan head screws. The average person, if they notice it at all, is going to think the screws belong there.



Tony Wiersielis, CPL, CFDI, Tony Wiersielis, CPL, CFDI, has more than a quarter century of experience, having worked in most phases of the trade throughout the New York metropolitan area.



Electronics of Locksmithing

By Jim Hancock, CML, CMST

Smart cards, Weigand and keypads… electronic access controls (EAC) are a part of everyday life to the locksmith. Gone are the days of turning this work over to an electrician or another industry to deal with. EAC, depending on what definition you use (or what state licensing entity you fall under) can be anything from a simple pushbutton cylindrical lock that uses AA batteries to the most sophisticated dual-credential, CCTV-connected, remotely administrated multi-opening system of strikes, magnets and other controlled hardware imaginable.

The evolution of this technology in just the past few years is amazing. It continues to grow and change at such a rapid rate that it would be easy to get left behind the curve. In doing so, you would not only be in a position to lose clients who need the latest and greatest in security, but your ability to acquire new customers could be hampered as well.

ALOA is always striving to develop classes and find the most knowledgeable instructors in their fields to teach the latest technologies and techniques in electronic access along with all aspects of locksmithing and safe work. The pandemic has wreaked havoc on live in-class training, but the Education Department has adapted and offered a wide variety of online webinars to keep pace with the industry. Keep watching emails and *Keynotes* for upcoming webinars and (fingers crossed) live training in EAC and other skill sets.

Jim Hancock, CML, CMST, is ALOA's education manager. You can reach him at jim@aloa.org or (214) 819-9733.

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Jovan Distributors Inc.
Phone: 416-288-6306
Fax: 416-752-8371
www.jovanlock.com

Key4, Inc.
Phone: 213-788-5394
Fax: 213-788-5444
www.key4.com

Keyless Entry Remote, Inc.
Phone: 402-671-5100
Fax: 402-671-5100
www.keylessentryremotefob.com

Keyless Ride
Phone: 877-619-3136
Fax: 409-216-5058
www.keylessride.com

Lockmasters, Inc.
Phone: 859-885-6041
Fax: 859-885-1731
www.lockmasters.com

Locksmith Ledger International
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Fax: 847-454-2759
www.locksmithledger.com

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Security Lock Distributors
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Fax: 800-878-6400
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Southern Lock and Supply Co.
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Fax: 727-544-8278
www.southernlock.com

Stone & Berg Wholesale
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Fax: 800-535-5625
www.stoneandberg.com

TimeMaster Inc.
Phone: 859-259-1878
Fax: 859-255-0298
www.time-master.com

Transponder Island
Phone: 440-835-1411
Fax: 216-252-5352
www.transponderisland.com

Turn 10 Wholesale
Phone: 800-848-9790
Fax: 800-391-4553
www.turnten.com

UHS Hardware
Phone: 954-866-2300
www.uhs-hardware.com

U.S. Lock Corp.
Phone: 800-925-5000
Fax: 800-338-5625
www.uslock.com

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ABUS USA
Phone: 623-516-9933
Fax: 623-516-9934
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ACS s.r.l.
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Fax: 052-291-2014
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Fax: 718-567-9056
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Fax: 909-685-9685
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www.assalock.com

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www.autel.com

Big Red Safe Locks
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Fax: 541-533-2404
www.bigredsafelocks.com

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Fax: 252-446-4702
www.kaba-ilco.com

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www.locinoxusa.com

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Fax: 408-516-0505
www.lockpicks.com

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www.luckyline.com

Master Lock Company LLC
Phone: 800-558-5528
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www.masterlock.com

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Fax: 540-380-1768
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www.sargentandgreenleaf.com

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www.seco-larm.com

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Fax: 317-578-4909
www.stanleysecuritysolutions.com

STRATTEC Security Corp.
Phone: 414-247-3333
Fax: 414-247-3564
http://aftermarket.strattec.com

Vanderbilt Industries
Phone: 973-316-3900
Fax: 973-316-3999
www.vanderbiltindustries.com

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Phone: 724-969-2595
www.assatechnicalservicesinc.com

FieldEdge, formerly deSCO
Phone: 888-614-0184
www.fieldedge.com

Lang Labs Inc.
Phone: 780-978-1309
www.langlabs.ca

Workiz Inc.
Phone: 855-790-7363
www.workiz.com

HELP WANTED

Employer: North Carolina State University
Working Title: Locksmith II
Anticipated Hiring Range: $40,000 - $42,000
Work Schedule: M-F, 7:00 a.m. – 3:30 p.m.
Job Location: Raleigh, NC
Department: Grounds & Building Services

Link to job posting: https://jobs.ncsu.edu/postings/137577

Primary job responsibilities for the Locksmith II position include, but are not limited to:

- Servicing, repairing and installing all door hardware, including fire rated exit devices, closers, mortise, and cylindrical locking hardware;
- Understanding and knowledge of hardware manufacturer installation specifications and guidelines
- Understanding of NFPA 101 and NFPA 80 life safety and fire codes, and the ability to locate and research needed materials associated with job from vendor source.
- Monitoring and tracking all orders for timely completion.
- Handling project management tasks, and having a working knowledge of processes and time lines.
- Providing cost estimates and proposals.
- Working knowledge in key bittings array for small format master keying, pinning of cores, ability to research and collect information pertaining to customer needs.
- Communicating with customer scope of work needed
- This position has been designated as mandatory personnel for the University and may be required to report to work during adverse weather conditions even though the University may be operating on an alternate schedule. This position may assist with snow and ice removal under the direction of a supervisor.

Other job responsibilities include, but are not limited to:

- Assisting other trades as required.
- Checking and re-checking work of others considering accuracy with respect to standards and code compliance.
- Maintaining on-call status; Mandatory on-call service rotation will be to provide after-hours emergency service when paged.
- Responsible for continuing education and license renewal requirements.

Minimum Experience/Education:

- High school diploma or equivalency; or demonstrated possession of the competencies necessary to perform the work.

Optional Guidelines: Experience in the Trade(s) areas related to the area of assignment may be substituted on a year-for-year basis.

- Must be able to communicate effectively verbally with supervisors and the general public and understand verbal and written instructions and other communications regarding work assignments and other matters.
- Knowledge and skills necessary that relates to keying a building, paperwork and documentation associated with rekeys and the ability to coordinate key meetings, pinning cores, cutting keys, and installation of hardware.
- Must be able to lift up to 30 pounds frequently, with or without reasonable accommodations.

Preferred Qualifications:

- 3+ years locksmith experience
- Proficient in Microsoft Office products, i.e., Word, Excel.
- Experience in AiM work order system is preferable, but not contingent for position.
- Institutional Locksmith Association and/or Associated
- Institutional locksmith Association membership.
- Certified Journey Level certification and/or Fire Door Inspector certification, but not contingent for position.

Required Licensing and Certifications:

- Valid Driver's license required. Must be able to obtain a valid NC driver's license within 60 days of hire and it must be maintained.
- Current locksmith license required. <02/21>

HELP WANTED

South of Atlanta GA, opening for an experienced locksmith. Must be able to pass background and drug test. Good driving record.

Commercial, residential and heavy on automotive.
Must be willing to work weekends. No night calls.

Send resume to keyfred@bellsouth.net. <02/21>

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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.

AD INDEX

Advertiser	Ad Location	Website	Phone Number
ASSA-Ruko/Technical Services	page 55	www.assatechnicalservicesinc.com	(724) 969-2595
Autel	page 25	www.autel.com	(855) 288-3587
Big Red	page 55	www.bigredsafelocks.com	(877) 423-8073
Bullseye S.D. Locks	page 55	www.bullseyesdlocks.com	(800) 364-4899
ClearStar Security Network	page 59	www.clearstar.com	(360) 379-2494
Corbin Russwin	page 1	www.corbinrusswin.com/ml2000indicator-ll2020	
Framon	page 19	www.framon.com	(989) 354-5623
Jet Hardware Mfg. Co.	back cover	www.jetkeys.com	(718) 257-9600
John Koons	page 60	www.koonslocksmiths.com	(239) 936-0373
Medeco	pages 7, 55	www.medeco.com/M4	
Security Lock Distributors	inside front cover, page 55	www.seclock.com	(800) 847-5625
Stone and Berg	page 31	www.stoneandberg.com	(800) 225-7405
Turn 10 Wholesale	page 3	www.turnten.com	(800) 848-9790

Listen to ALOA's New Podcast!

Have you heard? ALOA has a new podcast! Listen in to Locksmith Talk With ALOA each week as host William M. Lynk, CML, CPS, CMIL, ICML, M.Ed., interviews the brightest minds involved with the locksmith industry. Visit the Education calendar on ALOA.org for a link to the podcast.

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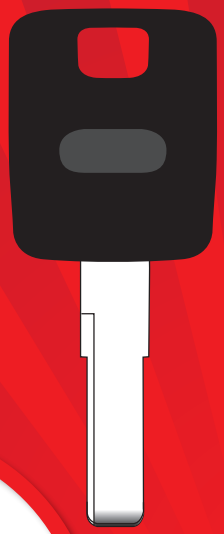

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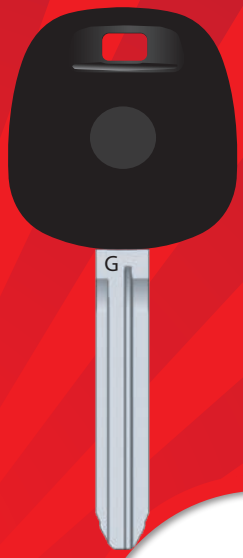

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