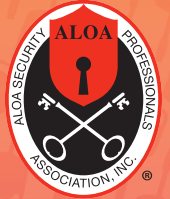


KEYNOTES

SECURING YOUR SUCCESS



Making a Key for the Ford Transit Connect

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989-354-5623 PHONE | **989-354-4238** FAX | 1201 W. CHISHOLM STREET ALPENA MI 49707



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Lisa, Vivian, Tara, Stephanie

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See You at the Upcoming Conventions

IN THIS ISSUE, WE ARE HIGHLIGHTING THE NEW INTERNATIONAL ASSOCIATION of Automotive Locksmiths (IAAL). The first convention of the new division of ALOA will be in Kansas City September 14-16. If you have ever attended a Just Cars weekend, this will be very similar. It will be *the* must-attend event of this year for automotive locksmiths. Hopefully, each of these conventions will be bigger and better than the last one. Plan on being there.

This month is the European Locksmith Federation (ELF) convention in Helsinki, Finland. If you have ever wanted to go to Europe and see all the different hardware that they have over there, this is your chance. They have the convention in a different country each year. It is a chance to travel and write it off for taxes. (That does not happen very often.) Last year, ELF was in Bologna, Italy, and they gave away a book on the Roman keys in the collection of the Italian Locksmith Association. I brought a copy back and gave it to ALOA to keep in Dallas.

Attend ALOA 2023 in Orlando

While we are on the topic of education, I really hope to see many of you in Orlando in August at the ALOA Convention & Security Expo. It is always a great time to renew old friendships and make new ones while getting first-class education. Each year, some of the classes sell out, and we have to turn locksmiths away. Get your choices in early.

And for all of you suppliers, it's not too late to secure a booth. Contact conventions@aloe.org to get some information and get signed up. Don't forget to sign up for the New Product Showcase as well for some extra exposure for your latest offerings.

Then there will be the Master Locksmith Association in England in October and Yankee Security in Springfield, CT, the weekend after that. There is just so much education going on this year — and don't forget ALOA's online offerings as well. Remember, the more you learn, the better you can serve your customers and the more money you can make. Ignorance is *not* bliss — it is expensive. You can't afford to not take classes and keep up your knowledge.



Bill Mandlebaum, CML

President

ALOA Security Professionals Association, Inc.

president@aloe.org



“Remember, the more you learn, the better you can serve your customers and the more money you can make.”

Coming Soon: ALOA 2023 and Auto Lock Expo

WE'RE NOW IN JUNE, and our 2023 ALOA Board and bylaws election has taken place.

Congratulations to our board members who have been re-elected: President Bill Mandlebaum, Associate Region Director Noel Flynn and South West Region Director Wayne Winton, who had been appointed to the board in the last year. Additionally, we welcome John Hubel as North Central Region director. Many of you know John from conventions and his work with ClearStar and Locksmith Security Association of Michigan (LSA). Thank you to each one of you for stepping up to help lead ALOA SPAI.

We also had five bylaws changes up for a vote this year. Bylaws changes require a 2/3 majority to pass, and each one of these changes was approved by the membership. For the full text of the changes and a description of what each change means, please see the May 2023 issue of *Keynotes*. You can also contact membership@aloea.org, and staff members are happy to answer any questions you have.

In the July/August issue of *Keynotes*, we will publish the full elections minutes as we always do, if you'd like to learn more details. It's also not too early to start thinking about running for the board for next year. The 2023 ALOA Convention & Security Expo is a wonderful time to get the signatures required for your candidacy materials. To receive a form, contact us and we'll send you one and some information.

ALOA 2023 in Orlando

ALOA 2023 registration is open, and registrations are pouring in. Join us August 6-12 at the Hilton Orlando for a great week with the industry's best instructors, hands-on classes and the latest products. It's definitely going to be "hot times and cool vibes!" Everyone who attends the convention year after year says how valuable it is and how the atmosphere is unlike any other event in the industry. You get to meet so many security professionals from all over the world, swap technical advice and make new connections for referrals and jobs. You don't want to miss it.

You must register by July 14 to get the discounted early registration price, and you need to book your hotel room by then in the ALOA room block to get our \$149 per night rate. Some classes and the room block always fill up, so you might not want to wait to make your plans. Convention registration is available online, and on ALOA.org you can find the link to book your room as well. For any questions, email conventions@aloea.org.

IAAL's Auto Lock Expo

While ALOA 2023 is coming up fast, don't forget about our new automotive-only convention in September. We are so excited to be holding the IAAL's inaugural Auto Lock Expo September 14-16 in Kansas City. Classes will be at the Kansas City Convention Center, with the room block at the Loews Kansas City hotel. See IAAL President Ed Woods' automotive spotlight column for more information, and we will



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6-12 for a great
week with the
industry's best
instructors,
hands-on
classes and the
latest products."**

also have the registration brochure and full class information available in July.

Education is at the forefront of ALOA's goals, and we are excited to be offering so many opportunities for professional development for our members and beyond. Thank you for your support, and we can't wait to see you in Orlando and Kansas City!

Mary A. May

Mary A. May
Executive Director
mary@aloea.org

Save the date!


Join us for the first annual
Auto Lock Expo

IAAL's convention for
automotive security professionals



September 14–16
Kansas City

Details coming soon on ALOA.org



For more information, or to reserve a booth,
email conventions@aloea.org or call (214) 819-9733.

Don't Forget to Register for ALOA 2023!

IF YOU HAVEN'T ALREADY REGISTERED FOR the 2023 ALOA Convention & Security Expo in Orlando, what are you waiting for? Join us for hot times and cool vibes August 6-12 at the Hilton Orlando for a week of classes, events and new products. Registration is live online on ALOA.org, and the full registration brochure is posted so you can see all the classes available.

Some classes always fill up, so don't wait to register! Register for the convention by July 14 to get the early registration discount, and be sure to book your hotel room by then as well to get a room in the discounted room block. To book your reservation, visit www.aloa.org, or call the hotel at 888-488-3509 and ask for the ALOA discounted rate.

Questions? Email conventions@aloa.org, and staff will be happy to assist.



Showcase Your New Products at ALOA 2023!

HAVE YOU RELEASED NEW PRODUCTS lately? Be a part of the New Product Showcase at ALOA 2023 in Orlando and get extra visibility for your company! Be a part of the special display and don't miss the chance for attendees to vote for your item to win Best New Product.

A short writeup on your product will also be included in the convention program and the ALOA website. Pricing is \$375 for one new product and \$600 for two. You must sign up by July 14, so don't wait! Contact conventions@aloa.org or call (469) 453-5588 for more information or for an order form.



IN MEMORIAM

➤ **Steve Myslik, CRL, CAL**, former ALOA Board member, has passed. He had been an ALOA member from 1992 until 2020 and was a member of SAVTA from 1994 until 2000. He operated Steve's Lock Shop in Summerville, SC.

➤ **John F. "Pip" Augustine, CML**, of Kingston, NY, has passed. He has been an ALOA member since 1988 and owned and operated JohnnyLock in Kingston.

➤ **James M. Nekota, RL**, of Honolulu, HI, has passed. He was an ALOA member for 48 years beginning in 1973 and operated Jimmy's Lock Repair.

ASSA ABLOY Releases Two Exit Devices

ASSA ABLOY HAS launched two exit devices. The SARGENT PE80 and Corbin Russwin PED4000/PED5000 Series exit devices are engineered for an extended life span of 20 to 30 years to withstand heavy usage. They have sloped, flush surfaces to eliminate catch points and minimize damage related to impacts from carts. Reinforced mounting brackets ensure the end caps never fall off from excessive contact. Users will find improved delayed egress functionality and enhanced motorized electric latch retraction, including electric latch retraction on FEMA-certified devices. They also feature a 5 lb. pressure latch release option on all rim and concealed vertical rod models to comply with

California building codes.

The devices are ANSI/BHMA A156.3 Grade 1 certified and have additional features such as multiple indicators, push rail dogging and master keying with security key systems. The models offer many decorative lever choices, as well as wide and narrow-style trim escutcheons. There are also customizable,

mixed-finish options as well as an option for special MicroShield or CuVerro Shield coatings to protect against germ transmission.

All models use post-consumer recycled materials and include EcoFlex technology on all electrified trim to save 89% more energy than standard electrified exit devices.



ASSA ABLOY has released two new exit devices: the SARGENT PE80 and Corbin Russwin PED4000/PED5000 Series.

PRODUCT BRIEFS

» Existing customers can now update their older version of Gcode to Version 23. It's available as a download or a USB memory stick. You can add online access for \$59.95 per year. Contact Framon or your distributor for more information.

» **TOPDON** has announced a software update for its TopScan, UltraDiag, ArtiDiag and T-Ninja Pro products. Upgrades include fixing bugs, updating code translation functions, optimizing the user interface and more.

» **Locinox** has introduced two new pull bars. BAR-I and BAR-A are installed with the stainless steel QUICK-FIX fixation bolts and are suitable for any form of access control. They work with magnetic and insert locks. BAR-I, the 17.72" stainless steel (316) version, can be installed with straight (00°), 60° or 90° brackets. BAR-A is the 14.37" black anodized aluminum version with either straight (00°) or 60° angled brackets.

NEWS BRIEFS

» Dave Timmerman, a 38-year veteran of the automatic door industry, is the new president of the American Association of Automatic Door Manufacturers (AAADM). He previously served as vice president of the association and has held various offices within it since 2019. He serves as director of code compliance and safety for ASSA ABLOY.



» **PDQ** has released its 2023 Price Book. Quotes issued on the 2022 Price Book will be honored through July 31, 2023.

NEW APPLICANTS

CALIFORNIA

Oakland

- **Ryan N. Dudey**
Precision Lockworks
Sponsor: Ken G. Nixon

FLORIDA

Bonifay

- **Karl Forster**
Wood-N-Key
- Fort Lauderdale
- **Dwight Chandler Hanna**
Lock Texx

West Palm Beach

- **Carlos A Calderin**

GEORGIA

Atlanta

- **Luis Ignacio Rojas Baldassarre**
Locksmith on Wheels, LLC

Elberton

- **Taylor C. Bellehumeur**
LockPro Locksmith
Sponsor: Jonathan P. Payne, CML, CPP

KENTUCKY

Nebo

- **Justin Hughes**
Mr. Pop-a-Lock Locksmith & Services LLC

MINNESOTA

St. Cloud

- **Andrew John Jaeger**
Central Lock
Sponsor: Michael E. Jaeger, CPL

NORTH CAROLINA

Charlotte

- **Dallas Van Leeuwen**
Self Employed

Reidsville

- **Waldo Smith**
Waldo Smith Locksmith, LLC
Sponsor: Brandon S. Whigham, CMAL

TENNESSEE

Lebanon

- **Scott W. Payne**
ALL City Locksmith LLC
Sponsor: James B. Arnold, ARL

TEXAS

Allen

- **Randy L. Almand**
JRSM, LLC/Bee's Keys
- **Matthew B. Rockhold**
Frontier Communications
- El Paso
- **David E. Saucedo II, RL**
The Saucedo Lock Company
Sponsor: David E. Saucedo, RL

WISCONSIN

Kenosha

- **Ryan J. Augustine**
Hoernel Lock & Key Inc. Kenosha

SINGAPORE

- **Samuel Thia Xing Guo**
Defence Singapore
Sponsor: Daniel Simon Selvam, RL

CALENDAR

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

JUNE 2023

June 20-21

ALOA Fire Door Inspector (AFDI) Webinar
4-7 p.m. CDT
<https://conta.cc/3MgLnqn>
education@aloa.org

June 21-22

IDN-Minneapolis Education & Trade Show
Minneapolis, MN
www.idn-inc.com

June 21-23

Southern Lock 2023 Trade Show and Learning Expo
Hyatt Place Downtown
St. Petersburg, FL
sduncan@southernlock.com

JULY 2023

July 29

IDN-Milwaukee Bratfest Trade Show
Butler, WI
www.idn-inc.com

AUGUST 2023

August 6-12

2023 ALOA Convention & Security Expo
Hilton Orlando
Orlando, FL
conventions@aloa.org
www.aloa.org



SEPTEMBER 2023

September 14-16

IAAL's Auto Lock Expo
Kansas City, MO
conventions@aloa.org
www.aloa.org/iaal/iaal-home.html

OCTOBER 2023

October 20-22

MLA Expo 2023
Telford International Centre
Telford, Shropshire, UK
locksmiths.yarringtonevents.co.uk

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We Need Your Help

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



IAIL Certifications

THIS MONTH I'D LIKE TO REMIND YOU OF ONE OF THE MOST POWERFUL benefits of IAIL membership: the certification program! This is how you establish your *bona fides* — evidence of your qualifications and achievements to serve as an expert witness and/or forensic consultant. It establishes for the court and the forensic community that you can offer a credible forensic evaluation. It gives your words gravitas and weight. What are our IAIL certifications? Glad you asked:

Credential	Certification	Division
CFL	Certified Forensic Locksmith	IAIL
CFMAL	Certified Forensic Master Automotive Locksmith	IAIL
CFFDI	Certified Forensic Fire Door Investigator	IAIL
CFLSV	Certified Forensic Locksmith — Safe and Vault	IAIL
CFPST	Certified Forensic Professional Safe Tech	IAIL
CFMST	Certified Forensic Master Safe Tech	IAIL
CFLARCH	Certified Forensic Locksmith — Architectural	IAIL
CFLA	Certified Forensic Locksmith — Automotive	IAIL
CFAL	Certified Forensic Automotive Locksmith	IAIL

Don't forget, you must recertify every three years. Beyond just the recognition of the designation itself, the fact that IAIL requires recertification every three years also adds tremendously to the seriousness of your designation. It shows how you must continue to be active and engaged professionally.

How valuable is all this? Some active in the industry have valued their credentials at \$100K-plus annually in additional income. Not bad for a \$65 add-on membership.

How do you recertify? There are multiple ways. First and foremost, take classes. This year at the 2023 ALOA Convention in Orlando in August, we are offering five excellent forensics classes — take some or all! Our free monthly webinars also grant

“Some in the industry have valued their credentials at \$100K-plus in additional annual income.”

credits. Volunteer, retest, take another certification exam or *teach* a webinar or class!

Finally, contact us with any questions or suggestions on certifications. These dedicated gentlemen are your CFL & Education Committee:

- Tom Demont, Chair
- Beta Tam
- Tom Ware
- Vernon Kelley
- Clyde Roberson

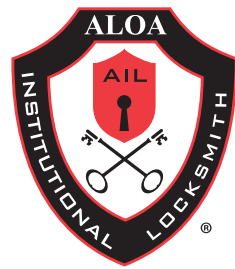
See you at the webinars. ☺



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

Get Published!

IAIL members: Submit your articles for the Investigative Spotlight department. Send your information to Ross Squire at ross@abcforensic.com.



Supervision: It's Not For Everyone

Steve Fryman, CRL, CAI, CISM, AFDI, relays his experience on what it takes to be a good supervisor in institutions.

IF YOU HAVE WORKED LONG enough, you will have experienced your share of good and bad supervisors. I have worked in the institutional world for

over 17 years. Supervisors come and go — employees too. Statistics reveal 86% of employees surveyed upon exiting their jobs said they left the job due to having a bad boss. Sadly, a bad boss can make your

work life miserable. On the other hand, a good boss can provide an environment that is rich and fulfilling. In this article, I would like to explore the differences between a good boss and a bad boss.

Good Boss, Bad Boss

The path to supervision is different for everyone. Usually, it's initiated by the willingness to show leadership in a position where it's not required. You become what you profess. Initiative and a good attitude pave the way for taking the next step in your career. Leadership recognizes there is potential for you to become a supervisor. If your institution is involved with APPA, you may be asked to attend a Supervisors Toolkit. This is good foundational and practical formal training. Training does not make you a supervisor, but it's immensely helpful. It gives you tools for understanding what the good traits of a good supervisor are and how to become one. This is a great starting point and experience to establish your path.

Whether you get formal leadership training or not, we learn from the supervisors we have had. Hopefully, you have learned what not to do from the bad supervisor. Why do I say this? I have learned more from a bad supervisor than I did from a good supervisor. You remember how you were treated and the interactions that took place daily. I re-



"Maybe we are micro-managing a bit too much."

member being told, “I am your superior.” That was a memorable conversation. How can you respect this kind of bluster? This kind of attitude will not endear you or motivate you to go above and beyond. If anything, it was a demotivator. The comment was repulsing and demeaning. Were you broken down or built up by this kind of interaction? The supervisor did not understand what his true role was in the working relationships with his employees. Supervisors should nurture and encourage. Would it not be better to be like a good coach you respect for his honesty, encouragement and guidance so you can take your career to the next level?

No matter what styles of leadership you have been exposed to, there is no substitute for good leadership. Poor leadership leaves employees dreading Sunday evenings, knowing they will need to slay the dragon of discouragement again. This makes Monday mornings a dread. The evidence of poor leadership that leads to discouragement is responsible for high turnover rates, absenteeism and low productivity that cost employers hundreds of thousands of dollars per year. In addition, these negative outcomes are part of toxic work cultures.

Setting Expectations

Everyone in an institutional setting has a position description that lists specific duties and tasks, which establishes expectations of the administration via Human Resources (which usually is neither human nor a resource...). The items on the position description have percentages next to them to give both employee and supervisor an idea as to what the job or work will entail. Often, there is a 5% “other” category that can mean just doing anything. The items from the position description are open-ended and can be anything.

It has been my experience that a satis-

“Poor leadership leaves employees dreading Sunday evenings, knowing they will need to slay the dragon of discouragement again. This makes Monday mornings a dread.”

factory performance appraisal does not equal a financial reward in the form of a raise. Why? If you work for a large public institution, raises are generally dictated by the legislature, although sometimes the institution’s president finds monies somewhere. Our institution had not given facilities employees raises in six years. There have been small one-time bonuses. Does this work differently at institutions that are financed by endowments? This gives little incentive for workers to go above and beyond. Hence the saying “making eight for the state” is unfortunately the predominant mindset.

On one of my first days in the institutional world, a co-worker told me to slow down. I came from the outside as a former business owner. This was culture shock for me. It did not take me long to understand how things differed from the outside world. Please forgive me for this statement — this was what I experienced,

and I do not want to offend anyone. I know there are a lot of diligent institutional folks out there.

Employee Compensation

Our president hired a firm that conducted a study that determined there should be raises. This year, we received a 5% raise, which was received with immense joy. Sadly, inflation eats up your salary before the direct deposit hits the bank. I am not sure a study was warranted. Seems to me that when workers do not get raises for six years and inflation is rampant, this would be a no-brainer. I don’t know what the consulting firm was paid for the feasibility study.

Conclusion

There are lots of books out there and opportunities for formal training. This gives direction as to what good supervisory traits are. The reality is that not everyone is cut for it. Currently, I am not supervising anyone. After 12 years of doing it, I welcome the break — often you are sandwiched between the administration and employees, which is an uncomfortable place to be. Like wearing shoes a half size too small, you feel the pinch. By no means am I trying to discourage you; I am merely wanting to make you aware of what work life could be like. If you decide to take on the responsibility of a supervisor, be a good one; lift and encourage your employees every day! ☺



Steve Fryman, CRL, CAI, CISM, AFDI, is a second-generation locksmith with over 45 years of experience. He has been a business owner for 20 years and is

currently working at Florida State University as a key compliance manager. Steve is a subject matter expert in institutional shop management.

IAAL Convention Is Coming Soon

GOOD NEWS: BY THE time you read this, you should be seeing class schedules and all the details of the IAAL's Auto Lock Expo September 14-16. Classes will be at the Kansas City Convention Center, and our hotel room block will be at the Loews Kansas City. The IAAL room rate will be \$199 per night. I've heard that some guys tried to book rooms and were told as much as \$340, and that's incorrect. Be sure when you book that you are getting our negotiated discounted rate.

Some instructors have set limits on the number of students in certain classes, as they have a hands-on approach. This means you should sign up as soon as you can. This is the first convention for IAAL, and I have been working with my board and ALOA staff to put together an event for automotive locksmiths of all levels — from first-year apprentices to 30-year seasoned pros. I encourage you to select classes that fit your skill level. If you are entry-level, advanced EEPROM instead of OBD diagnostics might be a bad choice. One of the common mistakes many students make is skipping the basics and then asking fundamental questions in advanced classes. You might get your feelings hurt.

Between the classes at ALOA in August and the IAAL Convention in Septem-

ber, the education this year will surpass anything we've ever done. ALOA's emphasis on automotive is a great new adventure. In addition, we could use some help. We'll have our first membership meeting on the evening of September 14. Please come and volunteer to help with future shows, provide input and run for a board position. My position isn't up for election, but there are others that need to be filled. I get one more year to get this group going, and then I will become an assistant to the new president. The current board has knocked out all the hard stuff: governance, by-laws and — most of all — convincing ALOA and the staff that auto techs do things a little differently when planning a convention.

Jim Hancock set IAAL on a path and had a vision as to what it could be. I think he is looking down and smiling in joy at what we're becoming. I hope to see you in Orlando and then in Kansas City at the new IAAL Auto Lock Expo. I truly hope I can say, "The most fun an automotive locksmith can have in one weekend," as I used to say about Just Cars. ☺



Ed Woods is the senior locksmith and company trainer at Lockout Express LLC. He's also an instructor for ALOA and several distributors. He serves on the board of IAAL as president.

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Once offered only with luxury vehicles, smart key remotes have become standard on most vehicle brands' mid- to high-level vehicle lines and as an option on most others.

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REGISTRATION FOR ALOA 2023 in Orlando has been live for a few weeks — hurry to sign up before classes fill! Join us August 6-12 at the Hilton Orlando for the hot times and cool vibes of the industry's premier event. Take classes, get CEUs, talk to suppliers and meet new people. It's all a learning experience! And a lot of fun.

Check out the latest digital copy of the brochure on the Convention section of ALOHA.org to see updates on what classes are still available. Many classes fill up

every year, so don't wait if you want to get your first picks for classes. We have something for everyone, from industry newbies to seasoned professionals, and we cover every area of the industry: electronic access control, automotive, hardware, safes, investigative and more. Learn new areas of the trade, and take some after-class PRP electives to work toward certifications.

The deadline for early registration discount as well as signing up for the PRP is July 14, so be sure to meet that deadline.

Register online via the link on the Convention tab on ALOHA.org, or use the form

in the registration brochure. Online is preferred, though, as it's quicker and will give you a better shot at securing your chosen classes! Contact conventions@aloa.org for assistance.

Book Your Room

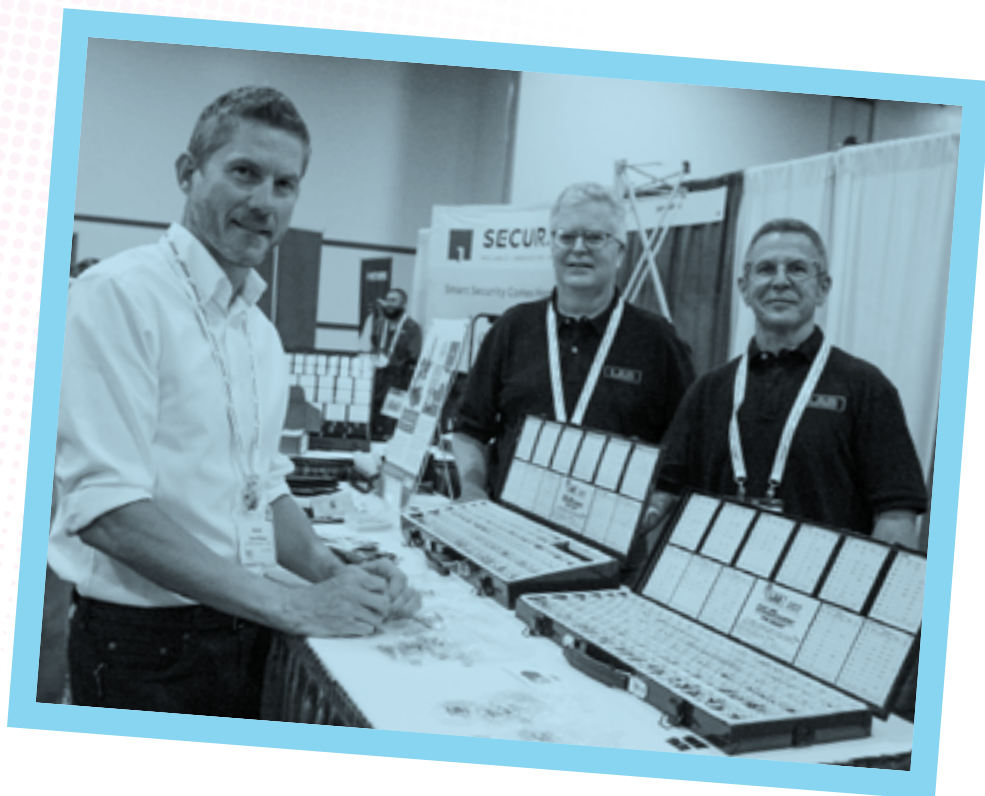
The room block at the hotel usually sells out as well, so be sure to book your room by July 14. The discounted rate is \$149, and you can secure your room by calling (888) 488-3509 and mentioning group name "ALOHA," or you can book online via the link on the Convention section of ALOHA.org.

The hotel is in a location convenient to all the Orlando attractions. You'll also get complimentary in-room Wi-Fi, 50% off self-parking, two free I-Ride Trolley tickets daily, and more. Hang out pool-side with all your fellow attendees!

Security Expo

There are always a ton of show specials offered during the two-day Security Expo, and you have a chance to get hands-on access to all the latest hardware, tools, services and more. Stick around until the last hour of the Expo to have a shot at winning the grand prize drawing of a full registration package for ALOA 2024 in Las Vegas.

If you have any questions at all or want to sign up for a booth or sponsorship, please contact conventions@aloe.org. We can't wait to see you in Orlando! ☺



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The Pros and Cons of Testing

By William M. Lynk, CML, CPS, ICML, CMIL, CAI, M.Ed.

TESTING IS USED EVERYWHERE, AND THAT FACT IS INESCAPABLE. Testing, especially written tests and standardized tests (a test that's administered and scored in a dependable or "standard" fashion), are omnipresent. Standardized tests are usually designed so that the questions and possible answers are consistent, valid and appropriate. The tests are then administered and graded in a prearranged and standard method. This presumes that the same or similar test is administered in the same fashion to all test

takers — and that they are then scored in the same manner for all test takers. That is the concept of a standardized test.

Who uses these types of tests? Schools, colleges, universities (ACT/SAT, grad school admissions, IQ tests and more); employers (professional evaluations, job

placement tests, etc.); FBI; psychiatrists; and many others. Of course, professional certification tests (ALOA!) are another such test.

Standardized tests fall into three categories: achievement, diagnostic and aptitude tests. They're so popular because they are: 1) easy to construct 2) simple to administer 3) easy to grade and 4) low cost.

As with any subject, there are both pros and cons of written testing, especially standardized tests:

Pros:

- Quick and easy way to assess.
- Helps identify areas for improvement.
- Considered a metric for learning.
- Can assist in evaluating progress.
- A low-cost alternative method to evaluate.
- Can be used to target both strengths and weaknesses.
- Offers accountability.
- Results can be generated and distributed quickly.

Cons:

- Sometimes test items may not be parallel with classroom content.
- Since general knowledge is being assessed, instructors might not be able to use standardized test results to evaluate their individual instruction content and methods.
- Test items often do not assess higher-level thinking skills.
- "Teaching to the test" can weaken the accuracy of test results.
- Testing often creates stress and anxiety for test takers.
- Standardized tests think in black and white — there is no middle ground. Thus, it is difficult to report question errors, variables or ambiguities.
- Challenges occur with people having learning disabilities.

"Standardized tests are usually designed so that the questions and possible answers are consistent, valid and appropriate."

"I Hate Written Tests!"

Is that you? Have you ever said or thought, "I'm bad at taking written tests"? Many people express that written tests are not a suitable measure of their acquired knowledge, expertise and past experiences. This may be true. Then make yourself better! The ALOA Bookstore offers *A Guide through the ALOA PRP*, which is one of many excellent avenues for learning test-taking strategies. It also offers sample questions in each testing area that help you see the types of information and the style of the questions you'll encounter. Prepping yourself for the test is easy; you just have to know how to do it.

The ALOA PRP (Proficiency Registration Program) is designed to test your level of expertise at a 70% level. Ways to prepare for these written tests include taking ALOA classes in the areas of your choosing and reading through the *LIST Council Locksmith Dictionary*, which is a fundamental tool used in much of the PRP. If you know the terms/definitions, you are more likely to know the answers. ALOA is exploring "inclusive testing" that incorporates written, oral and practical evaluation tools to assess the test taker. Though these are much

more cumbersome to create and administer — and much more costly — they are approaches now on the table. But in the meantime, pen and paper is still the standard.

Conclusion

Standardized testing is here to stay — at least for the foreseeable future. Cost versus other expensive evaluative platforms usually tells the story.

However, ALOA is working on a variety of ways to evaluate, aside from written testing, the "standardized" way to assess. So, if you are a complainer about written testing ("I hate written tests!" "I just don't ever do well on them"), then just stop and think it through. You *can* do well, if you want to. You just need the tools to do it. *A Guide through the ALOA PRP* is one great suggestion, tailored to the locksmith, and it's available at the online ALOA Bookstore.

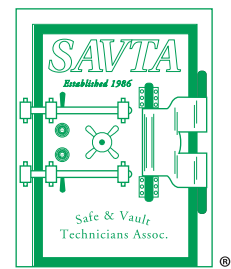
Regardless, you need to be in control of your own "evaluative destiny." But, in the meantime, spend a little time learning the best ways to take a written test so you can be successful at test taking as it is done today — and shine brightly! ☺



William M. Lynk, CML, CPS, ICML, CMIL, CAI, M.Ed.,

has been a locksmith since 1975 and is the owner of www.ICLSglobal.com. Bill is an IC specialist, an industry

author, the subject matter expert on IC for ALOA, and an ALOA ACE instructor, teaching classes on interchangeable cores and master keying across the country. He has originated SFIC Technical Manuals for both national and international lock manufacturers, and maintains a working relationship with the major lock and security manufacturers throughout the world. In 2013, he was named *Keynotes* Author of the Year.



FireKing Foursome

How a little handout can bring a big profit.

By Tom Gillespie, CML, CIL, CCL



WHenever we do a commercial job, we hand out at least one of our brochures. We had a piece designed for general commercial accounts that highlights the range of services we offer because many of our customers don't know the full range of our abilities and expertise. We have a second brochure that specifically focuses on our safe, vault and safe deposit work that notes we are GSA certified. Often, we hand out both pieces of

literature with our business card when we perform a simple survey or have been called to do general lock services (see my article "Creating Marketing Brochures" in the April 2017 issue of *Keynotes* for an article on these "old-school" handouts).

A company involved in government contracts had previously employed us to supply and deliver a FireKing four-drawer fire-rated vertical file after seeing one of our brochures. Here's how it worked out when they contacted us and said they wanted four more safes "just like the first one."



Figure 1. Tell People What You Do – We always promote our business. Often, a small promotional handout that clearly explains what we do brings us jobs like this. Investing in a few hours of design effort and very reasonable printing costs produced the information we wanted to share.



Figure 2. Loaded for Fire – With the Lift-A-Load trailer packed with the four FireKing #1831-C-BL files; standard and narrow pallet jacks; various thicknesses of aluminum sheets; and plenty of wood blocks of various sizes, we arrived at the job location.

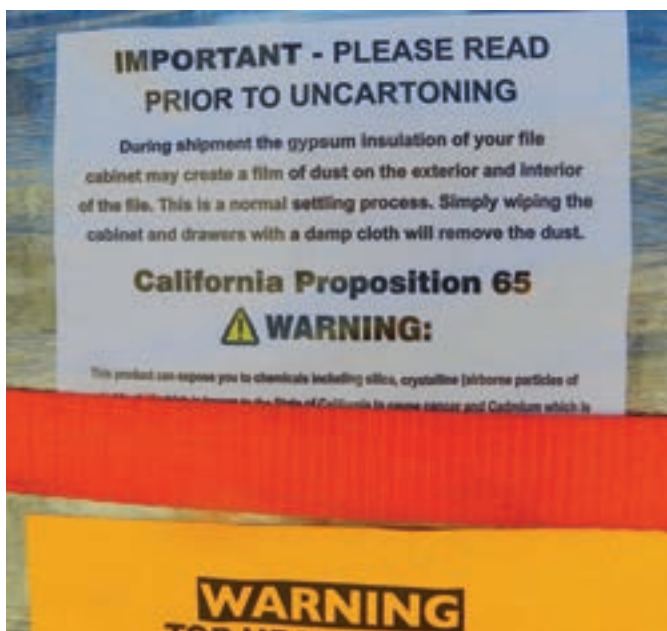


Figure 3. Read the Warning – Actions and cautionary information that used to be common sense must now be spelled out in great detail. The bright yellow “Top Heavy” labels clearly explain that a tall, narrow, 700-pound cabinet may be prone to tipping. Likewise the “California Proposition 65” label spells out the inherent danger of not wiping off the dust acquired during shipping.

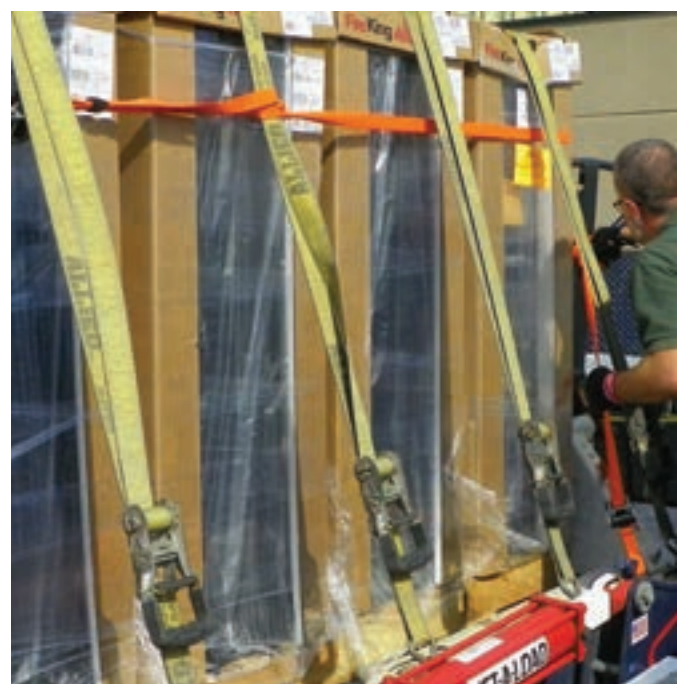


Figure 4. Cross Strapped – We secured the load with multiple straps to prevent movement during the trip. Upon arrival at the site, Brad began by releasing the tie-downs on one of the two pallet jacks we brought.



Figure 5. Loosen the Ratchets – Next, the larger tie-down straps were released from one side of the trailer frame rails. Each cabinet has its own primary vertical strap, and a second narrower strap was used to cinch the four units together horizontally.



Figure 6. Release the Other Straps – The smaller orange strap was wrapped around the cabinets and intersected with the large straps to make one cohesive block of weight secured to the trailer. The liability of a loosely strapped load includes more than the potential damage or destruction of the load itself. Other motorists and pedestrians can be injured or killed by an improperly secured load.



Figure 7. Blocks In Place – As Gene released the large straps on the other side, you could spot the 4x6 wood block placed under both front corners of the trailer bed. This gravel parking lot was sloped enough that we needed to add support to ensure that when we lowered trailer bed, it would be level with the sidewalk area for smooth unloading.



Figure 8. On The Ground – With the trailer lowered and all of the straps loose and mostly out of the way, Gene headed for the aluminum sheets to smooth out the transition points of the path of travel. Any large, heavy load will handle better if you use every opportunity to eliminate or overcome any steps, ridges, bumps or gradient differences before you start moving the load.



Figure 9. Protect the Threshold – This job was pretty straightforward. Here, the closest sheet protected the threshold from damage as the heavy cabinets were brought through the doors, while the outer sheet smoothed out a small ridge from the concrete sidewalk pad to the entryway.



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Figure 10. Open It Up – With the prep work completed, Brad, Gene and Alex began to unpack. These files are very well packed for shipping and protected with strong banding, heavy cardboard, Styrofoam sheeting and plastic covering. The second drawer on each cabinet has a manila envelope with keys and related information.



Figure 11. Remove the Brackets – Small nylon brackets with four screws each are used to prevent movement of the file on the pallet during shipping. We usually save a few such little items for use on future projects. Sometimes you simply need a black 90-degree plastic widget.



Figure 12. Number One is Ready – File cabinet #1 has been moved from the pallet to the pallet jack. A long 4x4 block was used to increase stability. Notice that more aluminum sheeting was used to bridge the height difference from the tailgate to the sidewalk.



Figure 13. Into the Lobby – As the first unit was moved into the lobby, Gene stopped and walked back toward the trailer for additional equipment. He told us we needed to first move two of the three existing four-drawer files that were in the room where these four new cabinets were going. The existing FireKing on the far right was to stay in place against the wall. We moved the other two and put new file #1 into place.



Figure 16. Number Four Moves – The last of the load was unpacked, transferred and headed inside with the others. The files were all headed to the records room at the facility.



Figure 17. Into the Records Room – With cabinet #1 already in place, #2 was maneuvered down the hall, around the corner and into the room.



Figure 18. Putting It in Place – Although three file cabinets are seen here, we were positioning the second cabinet. The cabinet at the far right (with the blue box on top of it as seen in *Figure 19*) is the unit we had sold them several months earlier, which resulted in the sale of the four new files. New cabinet #1 was already set in place.

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Figure 19. Two in a Row – The four new cabinets were all ordered keyed-alike to the existing cabinet. Keeping them properly aligned was important. After the pallet jack moved the cabinet to the final spot, it was lowered onto a wooden block and the pallet jack was moved out of the way. A step-by-step process using wood shims and muscle slowly got it to the ground and slid into place.



Figure 20. Three in a Row – File #3 was likewise shuffled into position and properly aligned. The plan was for all four files to be placed together in a perfect row. With two other existing file cabinets at the other end, it would be a solid wall of seven security containers for record protection.



Figure 21. Four in a Row – In reality, the last file would partially block access to an electrical outlet if it were to be in that neat row. The customer decided they needed enough room to plug/unplug a cord in that outlet, so we left a gap.



Figure 22. An Empty Trailer – With all the heavy work completed, it was time to clean up our mess. Although we were already very late for lunch, all the material we used to safely deliver these files needed to be reloaded. Aluminum plates were stacked, pallet jacks were loaded and strapped down, ratchet straps had to be correctly rewound and stored and the packing material needed to be properly disposed of.



Figure 23. A Packed Truck – All the cardboard, foam and plastic trash were shoved into the work van. The pallets wouldn't fit. As the customer came out to thank us for our efforts and sign the invoice, he said, "You guys can leave all that back in the dumpsters in back of the building if you want to." We did.

In every interaction with a new customer, you have the chance to tell your story. Let them know who you are, what you offer and how to contact you. Your normal business card can lead them to your website, Facebook page or other form of social media that your company uses to reach your customers. But, a simple "old-school" trifold brochure is worth the investment, in my opinion. Detail what your licenses, training and education qualify you to do with simple text, photos and illustrations in a one-page handout. By promoting your business with more than a simple business card, you might be pleasantly surprised at the results!

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Tom Gillespie, CML, CIL, CCL, is a 52-year veteran of the security industry. Since 1969, he has expanded his experience in the retail, manufacturing and distribution segments of our industry. Tom has taught educational seminars throughout the U.S. and Canada. He has authored numerous books, newsletters and articles for security industry publications. He is semi-retired but is still active in locksmithing. Tom can be reached at tomxgillespie@gmail.com.

Pontiac Fiero: a Classic Car

Bill Mandlebaum, CML, briefly discusses this 1980s car.



Figure 1. There are two ways to make a door key for the Pontiac Fiero.

IN 1984, THE PONTIAC FIERO CAME OUT. IT WAS ONLY MANUFACTURED FOR 5 years, so there was only one version of it. The engine was in the rear, and the trunk was in the front. The keys were standard GM for that era. The ignition was separate, and the doors and engine compartment were the same key. I never saw one with a locking glove box. The STRATTEC parts list does not show a glove box lock.

The ignition was the standard bolt-in GM lock. The column was a Saginaw and nothing unusual. For a lost ignition key, you could tear down the column, and the code was always stamped on the side of the lock — unless it had been replaced. If the lock had been replaced, the easiest thing to do was just to replace it with a STRATTEC lock since it was not keyed to any other lock on the car.

The real problem came if the door key was lost. Since the engine compartment locked, you could not get to the engine without a key. The doors were very hard to take apart and would give you headaches.

Making a Door Key

There were two ways to make a door key. The easiest lock to work on was the engine lock, believe it or not. The case cap was plastic and easy to peel off. Then you could drill a hole to put pressure on the sidebar to pick the lock. The tumblers frequently had the depth number stamped on them.

My favorite way to generate a door key was to use a safe deposit puller and pull the plug out of the housing. Then you could reach in with a flat-blade screwdriver and

open the lid. The puller usually only damaged the first two tumblers. I would then take the plug apart and get at least four of the six depths. I would then progress the first two cuts if the tumblers did not give you all six. I used the passenger-side door lock for progressing since it got the least wear and road grime.

STRATTEC makes a lock service package (STRATTEC 700508) for rebuilding the engine lock. It contains everything except springs and tumblers. The case cap (STRATTEC 322555) can be bought separately. STRATTEC was the OEM supplier of all the locks. ☺



Bill Mandlebaum, CML, is the president of ALOA SPAI.

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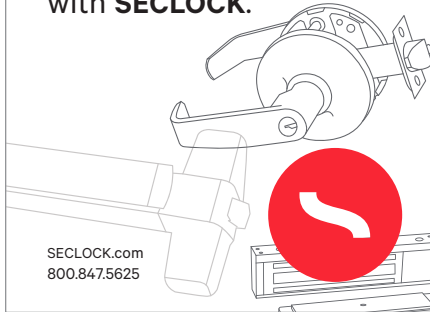
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Making a Key for the Ford Transit Connect



Rafael Marte, CRL, CAL, CPS, CAI,
explains steps and tools you'll need.

AUTOMOTIVE KEY SYSTEMS HAVE COME A LONG way from pin tumbler and disc tumbler locks to high-security key systems that require special tools and knowledge to duplicate or originate. Amongst these, the Tibbe key system stands out as one of the most unique designs in the automotive locks category. Tibbe key systems were first used in the North American market on the Merkur Scorpio by Ford Lincoln Mercury in late 1988. (The first Scorpio's used Chubb lock systems in early 1988 but were quickly recalled and replaced with Tibbe Key systems.) The Scorpio did not sell well and was discontinued in 1990.

In the same year, Jaguar adopted the Tibbe key system and continued to use it on almost all of its vehicles until the late 2000s. In the early 2010s, Jaguar vehicles began using Ford's High Security 2-Track, 10-cut key systems for the emergency keys in the proximity fobs. Around the same time, Ford Re-introduced the Tibbe key system on its European-style (tiny work van) Ford Transit Connect 2010 models. However, it did not use the 8-cut 3-depth system that Jaguar used for its vehicle's locks. Instead, it opted on the 6-cut 4-depth system first used on the Merkur Scorpio more than two decades before. Ford continued to use the Tibbe key system on Transit Connect models up to 2013. The 2014-2023 models switched over



Figure 1

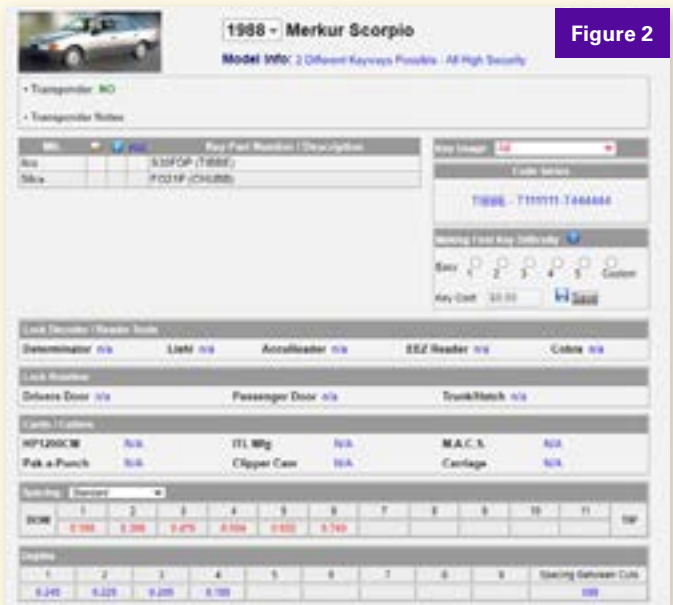


Figure 2



Figure 3

Figures 1-3. Autosmart Advisor can be a great resource for automotive locksmiths.



Figure 4. This is a diagram of an ASSA ABLOY lock. Used with permission from ASSA ABLOY.

to the 10-cut 2-Track Ford key system. From 2010-2013, Ford sold approximately 137,000 Transit Connects in the U.S. In Northwest Georgia, we have dealt with quite a few, as there is an appliance company with a fleet of them close to our shop. Most of the time, we are cutting duplicate keys and repairing/replacing locks, but every now and then, we have to originate a key as well.

When it comes to automotive key resources, my go-to has been Autosmart Advisor. I have found them to be the most

consistent when it comes to keeping the data updated and removing errors from its database. The database can be pulled up via browser and app, and they even sell books. If most of your business comes from automotive jobs, you need to go to michaelhyde.com to get yourself and/or employees a subscription. Figures 1- 3 have some screenshots of the desktop version that show the information just mentioned in the first paragraph.

In any scenario, we must first have a good understanding of what makes these key systems so unique. Don't get me wrong, the Tibbe key system is not the only one of its kind — it's similar to the Abloy system because it uses rotating discs and a side bar mechanism. But if you are an automotive locksmith, you will agree that there is no other automotive key system that uses the same principles. The cuts on the key are angled to so that when the key turns, the discs align so that the side bar may drop in. I know this sounds like other side bar locks, but the difference is that the grooves don't align by simply inserting the key, but rather when the key is rotated in the lock.

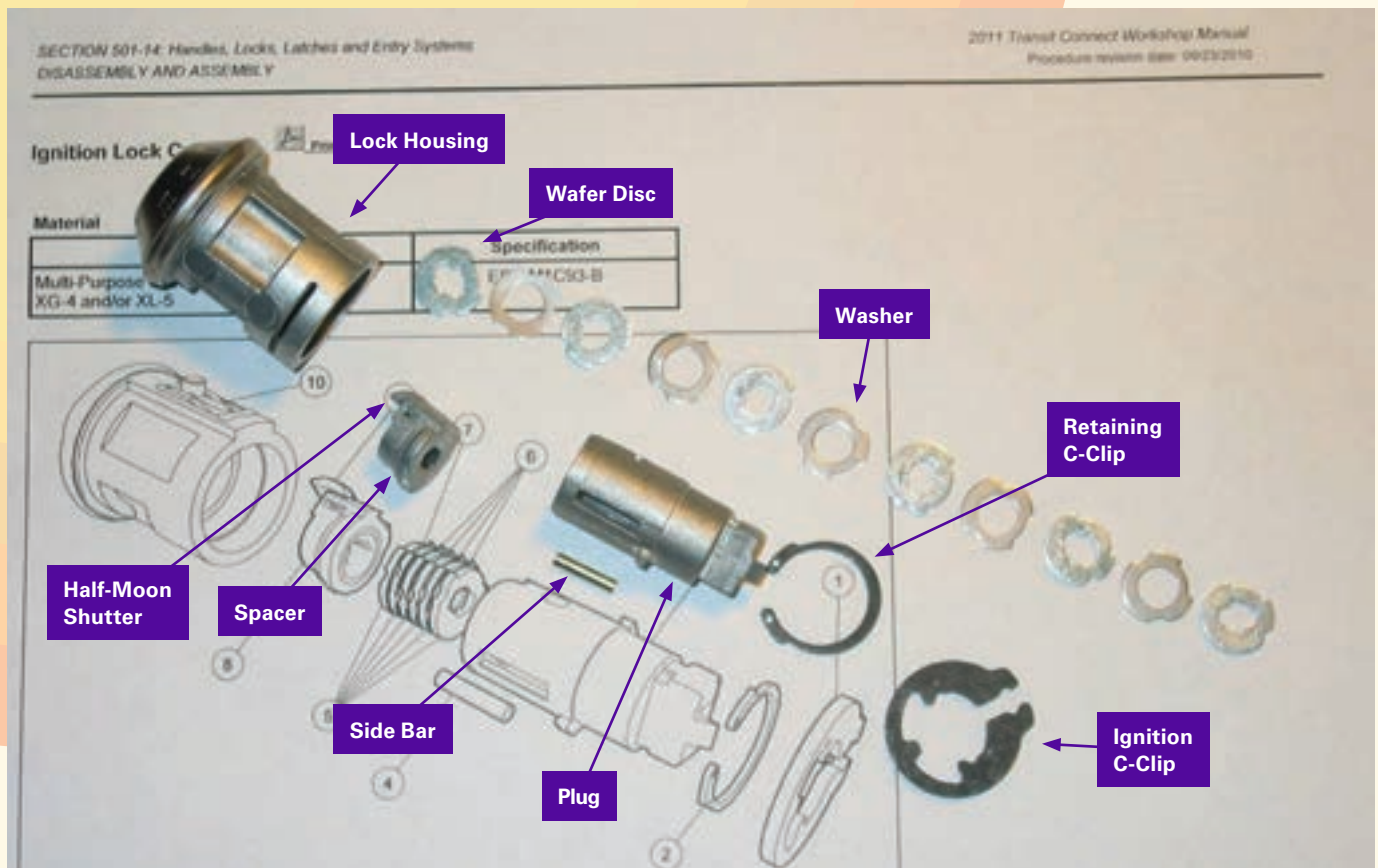


Figure 5. This image shows the individual parts of the ignition lock for a 2010-2013 Ford Transit Connect.



Figure 6. This is the side bar of a door lock in the rest position.



Figure 7. This image shows the side bar of a door lock dropped into the plug after a properly cut key has been turned.



Figure 8. You can see the gates on the discs.

Ignition Lock Parts

Figure 5 shows the individual parts of the ignition lock for a 2010-2013 Ford Transit Connect. The shutter at the entry point of the ignition lock swivels when the key is rotated. Due to its “half-moon” shape, the swivel spans the space between the face of the lock and end of the plug. (This is done to push the plug into the ignition switch and serves as the key buzzer.)

The washers reduce friction between the wafer discs. The side bar is not spring-loaded like most other side bar mechanisms. Turning force and the housing’s design usher the side bar into the gates on the discs. Figures 6-8 provide some additional insight.

Tools Needed

Working with Tibbe key systems requires specialized tools and techniques to ensure that the locks are correctly serviced and the locksmith is successful in getting the job done. In this article, we’ll be discussing the Ford Tibbe system for the 2010-2013 Transit Connects. (Not to be confused with the full-size Transits that use the 2-Track 10-cut 5-depth system). To have a successful key origination, the locksmith must have the following:

- Key-cutting machine with the capabilities of cutting Tibbe keys. There are many machines that cut Tibbe keys and, among them, Framon and HPC both have adapters that can be used on their machines.

- Framon Tibbe key attachment (manufacturer part #F2SH070, *Figure 9*)
- HPC Tibbe Key Adapter Key (manufacturer part #TIBBE-CMB, *Figure 10*)
- Decoder to obtain the bitting (Don't be a code smith)
 - Most locksmiths with moderate impressioning skills could easily impression these types of locks.
 - There are several decoders for Tibbe on the market. I can only speak on the Lishi/Huk Tibbe 6-cut pick, as it's the only one I have any experience with. (manufacturer part #PFTPD 6-Cut, FO21-2 or Ford Tibbe Pick, depending on who you ask)
- Mechanical key blank (See *Figure 2* for a list of part numbers and manufacturers)
- Programmer if immobilizer equipped (optional)
- OEM remote head key (optional)

I would first like to point out that these vehicles are transponder optional, with two possibilities for the chip type. Most XLT models with power windows and power locks are equipped with the immobilizer system. Some vehicles require the Ford 40-bit chip, and others need the 80-bit. The simplest way to tell if it requires a chip or not is to look for the antenna ring around the ignition lock. If the vehicle is equipped with a transponder system, it may be best to program in an OEM remote head key since aftermarket keys can sometimes be troublesome to program. We can go more in depth into the programming of the vehicle, but that can be a separate article. We'll mostly be focusing on the mechanical keys and locks.

Scenario No. 1: Duplication

If the customer needs a duplicate key, decoding the existing key by sight reading is the first method I use. This is contingent upon the amount of wear on the key. These wear in the same fashion as the Chevy Equinox Ortec locks because the wafers/discs are made from a harder metal than the key, thus wearing the keys down to sometimes to an unreadable state.

Figures 11 and 12 examples of a slightly worn key (*Figure 11*) and a freshly cut key (*Figure 12*). To sight read the key, we reference the vehicle specs to decode. We already know that this is a 6-cut 4-depth system, so we'll focus on the contrast between the deepest and shallowest cuts to help identify the corresponding depth. The key bitting is 412123 and — as you can see — the first cut in this combination is the deepest. Also notice the shallowest cuts are on 2 and 4, which are 1s. If you can make out the 4 depths on the key, you are well on your way to successfully decoding it.



Figure 9. This is the Framon Tibbe Key attachment.

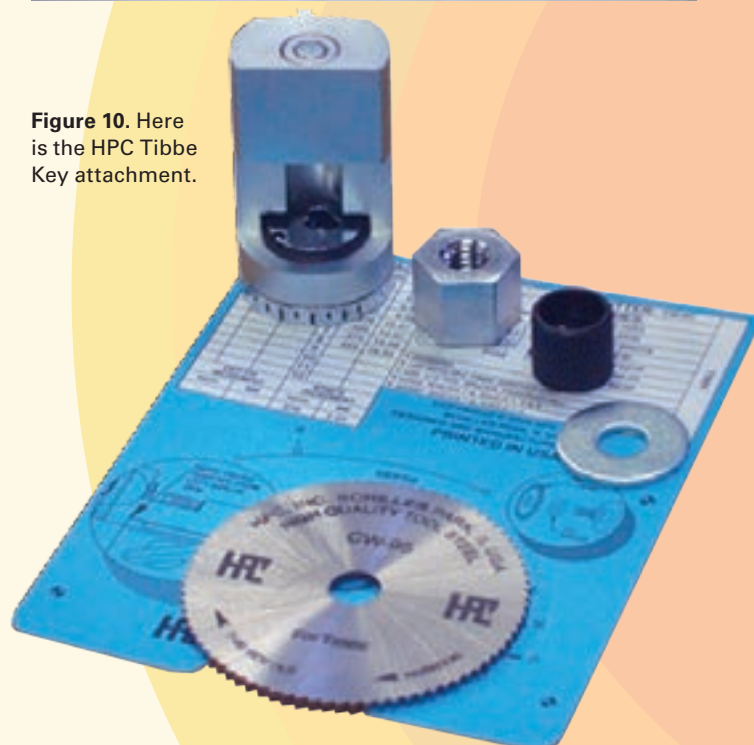


Figure 10. Here is the HPC Tibbe Key attachment.

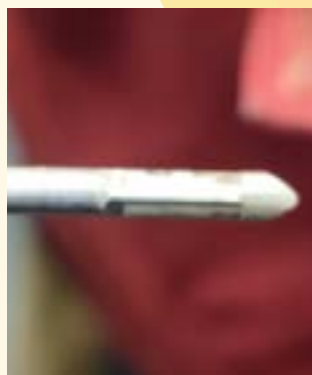


Figure 11. Here's an example of a worn Tibbe key.

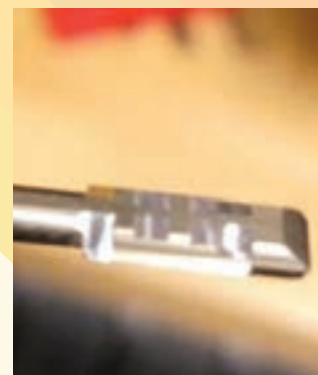


Figure 12. This is a freshly cut Tibbe key.

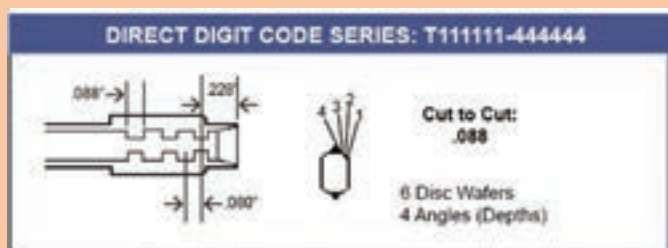


Figure 13. In this illustration from Autosmart Advisor, you can see the Ford Tibbe key specs.



Figure 14. Take a look at this reference for spacing and depth. Photo courtesy of shoerepairer.info user "The Workshop Heel Bar."



Figure 15. The author uses the Lishi Ford Tibbe pick.



Figure 16. To help understand how the pick works, here are the individual parts for the Transit Connect ignition lock. Image provided by quickparts.com.



Figure 17. Shown here are the housing, plug, C-clip and retainer of a Ford Tibbe ignition lock.

Figure 13 from the Autosmart reference guide illustrates that the degree of the cut is the depth. It is important to know that no MACS rule exists for Tibbe key systems, and any combination entered into a codes database will generate a code. Figure 14 is another example.

Scenario No. 2: Picking and Decoding with a Lishi Pick

As I mentioned earlier, there are several pick/decoding tools for Tibbe on the market. The one I am most familiar with is the Lishi version of the tool, which is my go-to for Tibbe key makes.

The tool is designed to rotate the disc tumblers individually at the center hole of the wafer discs. After inserting the tool, we will need to rotate the discs until the gates align with the sidebar of the lock. Remember to make sure that the arrows on the tool are all pointing in the same direction for all spaces. This is not necessary to pick, but it will help read the bitting during the decoding process. Figure 16 depicts the individual parts for the Transit Connect ignition lock to help understand how the pick works.

“Tibbe key systems stand out as one of the most unique designs in the automotive locks category.”

Unlike other Lishi pick decoders, this tool uses 4 depth cuts in the bitting to create tension. One thing to keep in mind is that the disc tumblers don't need to align with the gates on the discs to turn the cylinder to the locked position on the doors (meaning that any miscut or un-cut key could lock the vehicle). So, one must know to put tension toward the unlocked position for a successful reading.

The way to tell which space has a 4 is by the lack of movement at that position. In *Figure 18*, spaces 4 and 6 are used to create turning tension. From there, you will rotate the discs one at a time at their individual spaces. You will know if the position is picked by the subtle feel of the sidebar falling into the gate.

After the lock has been picked, you are now ready to get your bitting. There are lines numbered 1 through 4 on each of the rotating discs of the tool that will be used as indication marks. The markings that line up from space 1 through space 6 will be used for the bitting. Also, the 4 depth used to create turning tension will be used when referencing which lines to use on the tool.

On *Figure 19*, I drew a red line next to the lines used for the bitting to demonstrate which set will be used. Notice that the lines to the right and left of that set are not continuous. The lines to the left read 130230 and lines to the right read 302402. The correct bitting is 241341.

Now that we have our bitting, it's time to cut our key. Due to the angled cuts on the key, the machine used must be able to rotate the key to the degree specification of the cut angle. The machine we have at our shop is the 994 laser made by Keyline. For those of you not familiar with this machine, it requires the use of different jaws, depending on the key. For the Tibbe system, it calls for the H Jaw.

Since technically there are 12 passes when cutting the key, it could take a little longer to cut (3 depths on 4 sides since 1s are no-cuts). There are probably some machines that can cut this key faster, but I have only used the 994 laser to cut these types of keys. Keep this in mind if you intend on impressing one of these.



Figure 18. Here's a visual aid for spacing for the Lishi Ford Tibbe pick.

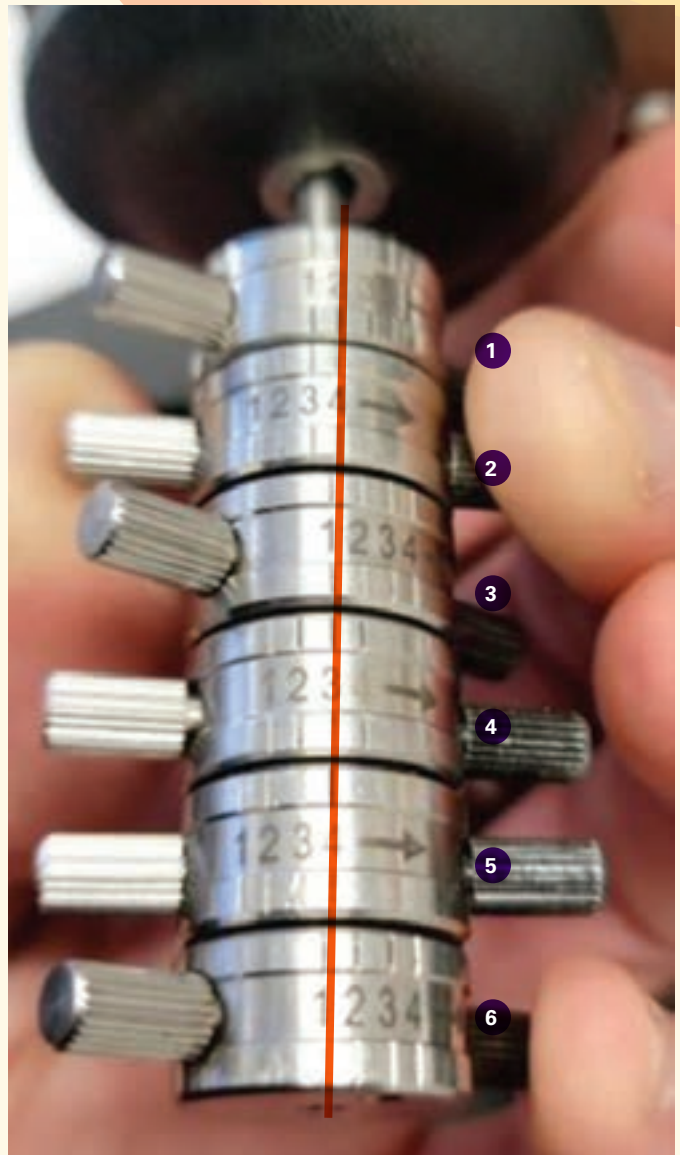


Figure 19. This is a Ford Lishi Tibbe decoding aid.



Figure 20



Figure 21

Figures 20 and 21. The Keyline 994 Laser key-cutting machine requires the use of different jaws, depending on the key. For the Tibbe system, it calls for the H Jaw (Figure 21). Figure 20 used with permission from Keyline.



Figure 22. We now input the bitting into their corresponding spaces using the machine's tablet. It will then ask you to remove the cutter and reinsert after it makes an adjustment to cut the key.



Figure 23. The key must be tightened onto the jaw with the provided Allen key. It will then instruct you to turn the key left or right to the number 2. (1s are no-cuts.) It will cut the number 2 on however many spaces it comes up on that side and then do the same for 3 and 4 depths. It will then have you do the same on the opposite side you started with, and then you turn the key over and do this two more times (four total).



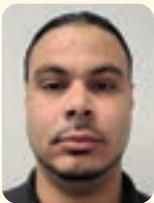
Figure 24. This image shows the cut to the bitting from the lock from Figure 19.

“It is important to know that no MACS rule exists for Tibbe key systems, and any combination entered into a codes database will generate a code.”

As good business practice, I always check the key on all the door locks — and, if you don’t already know, the key is used on the hood lock on these vehicles. If you go to where the hood release is usually placed, you will find a sticker with directions on how to open the hood. Basically, you have to lift the Ford logo out of the way to find the hood lock. Then, insert the key and turn left to disengage the safety latch, and then turn right to fully lift the hood. See *Figures 25 and 26*.

In conclusion, Tibbe key systems can be intimidating if one does not have the experience and understanding of how the mechanism works. If you are an automotive locksmith and have not yet done one of these, hopefully this article has given you the confidence to get equipped and begin servicing these vehicles. I always say that when we tell a customer, “We don’t work on that,” we are giving our competitors the opportunity to tell that same customer, “We can do that for you.”

If you have yet to purchase the necessary tools and equipment to do these types of jobs, contact your suppliers for pricing or, better yet, come down to the ALOA and/or IAAL conventions to take advantage of the floor sales from the vendors you already know. Invest in yourself and invest in your future by attending courses and networking with other trade professionals. ☺



Rafael Marte, CRL, CAL, CPS, CAI, is a locksmith and security professional with over 18 years’ experience in the industry. Rafael has been an ALOA member since 2011 and has participated numerous training programs. He began his locksmith career as an automotive specialist and, throughout the years, has expanded his capabilities to safe servicing, hardware installation and electronic security. Rafael is also a member of SAVTA, IAAL and IAAL and is a licensed low-voltage electrician in Georgia. He uses his training and skills as president of operations for The Lock Guys Inc., in northwest Georgia and Chattanooga, TN. He recruits, trains and supports locksmiths at all skill levels and aims to share his knowledge with others who invest in their skillset at various trade shows events.



Figure 25. This image shows the procedure for a hood release.



Figure 26. The key is disengaging the hood release.



The Key to Escaping Groundhog Day

When a customer has the same problem repeatedly, it's time for a new solution.

By Rick Karas, RL, CFDI, AFDI

ALBERT EINSTEIN IS OFTEN given credit for the quote, "Insanity is doing the same thing over and over again and expecting different results." "Over and over again" are the words a property manager kept using as he explained a problem with the locks in his building.

"We keep replacing them repeatedly. They just don't seem to last. We are hoping that they will, but they never do." He went on to explain to me that the company that installed the access control system in his building was no longer in business and were the ones that he had been calling to replace the locks. He also told me that the locks were not cheap. He made a point of telling me that, and I read his message loud and clear. He contacted me because I had previously done work at his building.

We entered the parking garage and walked over to one of the many parking garage stairwell doors. There was a proximity reader on the wall and an electrified cylindrical lockset on the door. The door was supposed to unlock and grant access to the stairwell door when an authorized credential was presented to the proximity reader. This was the same setup on all levels of the parking garage doors. He held his credential (a key fob) up to the proximity reader, and nothing happened.

He explained to me that he thought that the lock was bad because the access control company that previously did his service work had always replaced the lockset to fix the problem. He also told me that the building had been subjected to lightning strikes, had power issues and often has power spikes, especially during inclement weather. I asked him for a key fob so I could try to dig further into his issue.

First Things First

There were a few things that quickly came to my mind as to what the problem could be: bad reader, bad lock, power issue or simply the programming in the access control system. I decided that my first step toward diagnosing the problem would be to check if there was power to the door lock.

Lucky for me — so I thought at the time — there was a 4" electrical box on the wall right next to the door with a door cord attached to it and to the door. My thought was that the door cord was a power transfer cable, and inside of the electrical box I would find the wires that provided the lock with power. I removed the cover of the electrical box anticipating finding the power wires spliced where I could check for power. Nope, not that lucky this time: The electrical workbox was just used as a pass-through for the power wire (see *Figure 1*). My next move was to check the power at the lock, so I put the electrical box cover back on and removed the lock from the door.

Once I removed the lockset, I noticed that the power wires were attached to the lock with twist-on wire nuts (*Figure 2*). Let me just shift gears here for a second. Using twist-on wire nuts is a bad idea in this situation because the vibration from the door closing could cause the wire nuts to become loose over time and fall off, as happened to the red wires shown in the photo.

With the lock removed, I was able to attach my multimeter to the incoming wires. The reading I got was a voltage of 25.84 VDC, just a little bit more than the 24 VDC I was expecting (*Figure 3*). The voltage was constant, and when I presented the fob to the reader, the voltage momentarily went away for a few seconds; this confirmed my theory that the lock was fail safe. The lockset was bad and needed to be replaced; this validated what the property manager had said about the lock going bad and needing to be replaced.



Figure 1. The electrical workbox was just used as a pass-through for the power wire.



Figure 2. The power wires were attached to the lock with twist-on wire nuts.



Figure 3. The multimeter had a reading of 25.84 VDC.



Figure 4



Figure 5



Figure 5a

Figures 4-5a. The author chose the SDC Z7250GQ Electra Pro because the power regulator (*Figure 5a*) is included with the lock.

My finding was unsatisfying. Yes, I had found the problem. But if I just replaced the lock like they'd done in the past, would I truly be solving my client's problem or just buying him some time until it needed to be replaced again? I felt it was the latter, and I really did not want to step into the shoes of the previous company by just replacing the lock and moving on. Experience and intuition told me that I needed to do something to correct his problem once and for all.

A Chat With My Client

I spoke with my client, explained my finding and said I wanted to do something different than what had been done previously. I explained that the voltage coming down to the lock to be a little high at 25.8 VDC, and it should be 24 VDC. I also made clear that I was concerned about the power surges and electrical problems that the building experi-

ences. He told me again that the building experiences power issues quite often. I asked him if he had ever seen the movie *Groundhog Day* with the actor Bill Murray. He said he had seen it and looked a little confused. I asked him if he felt like his situation with replacing the locks was similar. He laughed and said, "Yes, exactly, but I was told there was nothing that could be done except to replace the locks." I asked him if he would be open to trying something different to hopefully alleviate his problem with his locks once and for all.

I explained to him that I wanted to install a different brand of lock that would have the same physical look to it (same handle style and finish) as the lock that was currently on his stairwell door, except this lock would have a power regulator installed with it. I explained that the power regulator would help to limit power consumption, reduce heat and sup-

press any inductive kickback that may occur — and that one of those was most likely the culprit for his problem. I am not sure that he totally understood, but he gave me the green light.

Prep Work For the Job

I chose the SDC Z7250GQ Electra Pro, which is one of the solenoid-controlled cylindrical locks in SDC's 7200 Series (*Figure 4*). The part number that was on the box is shown in *Figure 5*. The SDC Z7250GQ is an ANSI Grade 1 fail-safe electrified cylindrical lockset with a clutched lever. The lockset is designed with dual voltage of 12/24 VDC and has a SPDT rex output.

The reason that I chose the lock is because the PR-7200 power regulator (*Figure 5a*) is included with the lock. This is the component that would hopefully solve my client's problems. Additionally, this meant that there would be no



additional cost to my client because it's included. Remember, my client had specifically told me more than once that the locks were not cheap. His loud-and-clear message kept reverberating in my head as something to be mindful of.

I do as much prep work as I can in my shop before going to a job site. This helps to not only cut down on time once I'm on the job but also to address problems ahead of time — no one likes surprises on-site.

I decided to install the included power regulator on the lock in my shop so that I could make sure that all my connections were good. This also gave me the opportunity to bench test the lock before I went to the job site.

Dressing the Wires

For me, it's important to be organized. Being organized allows me to stay focused on what I'm doing. I also like to have only the equipment or parts that I'm currently working with on my workbench. This helps to ensure there are no leftover parts or questions about parts remaining on my bench that may have come from a similar lock (or something else).

The Z7250GQ has two cables (Figure 6) coming out of the chassis of the lock body. One cable has four wires (white, black, blue and red, as shown in Figure 7) that will connect to the incoming power. The way in which they are connected determines the voltage — either 12 VDC or 24 VDC — that the lock will be set to accept. Figures 8 and 9 show the wiring diagram that can be found on the body of the lock for both 12 VDC and 24 VDC. For this application, I was going to set the lock up to 24 VDC. The other cable has three wires: yellow/red (normally open), white/red (common), orange/red (normally closed) (Figure 10). These are optional monitoring wires used to monitor the latch status. I did not use these wires on this project.

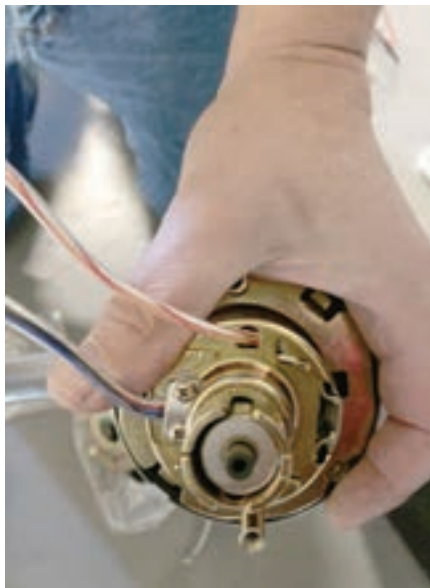


Figure 6. There are two cables coming out of the chassis of the lock body.



Figure 7. There are four wires (white, black, blue and red) that will connect to the incoming power.



Figure 8



Figure 9

Figures 8 and 9. Here's the wiring diagram that can be found on the body of the lock for both 12 VDC and 24 VDC.

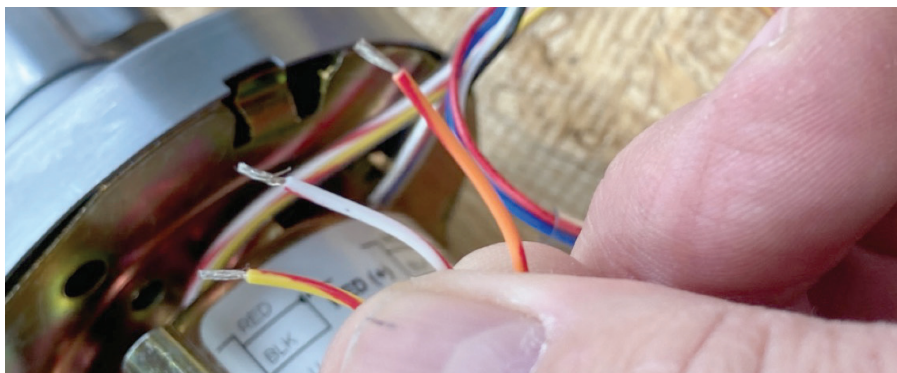


Figure 10. This other cable has three wires: yellow/red (normally open), white/red (common), orange/red (normally closed).



Figure 11. The PR-7200 regulator has four wires: white, blue, black and red.



Figure 12

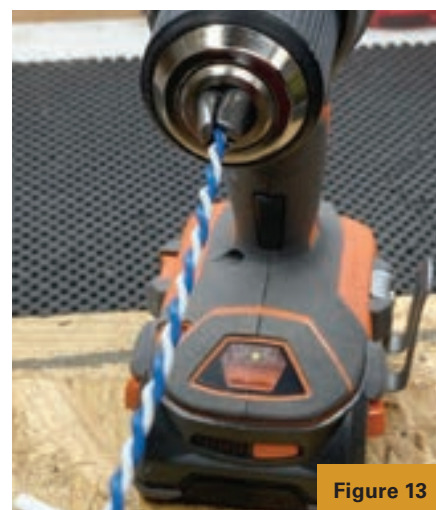


Figure 13

Figures 12 and 13. The author uses a drill to wind the wires together.

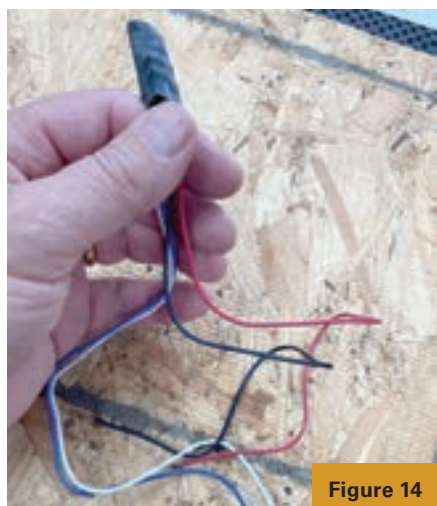


Figure 14



Figure 15

Figures 14 and 15. Here are the before and after versions of the wires.



Figure 16. You can see the final connections.

The Power Regulator's Wires

The PR-7200 regulator has four wires: white, blue, black and red (*Figure 11*). The blue and white will be connected to the lock, and the red and black will be connected to the power supply. The regulator has two wires in and two wires out. To keep the wires neat and orderly, I like to dress the wires and make all possible wire connections prior to installing the lock. One little trick is to use a drill. I take the wires, insert them into the chuck of my drill (*Figure 12*), pull slightly taut on the other end of the wires and pull the trig-

ger on my drill. The drill will neatly wind the wires together (*Figure 13*). Note: Don't overtighten the wires. Stop when they are finished twisting themselves together.

Figures 14 and 15 show the before and after versions of the wires, respectively, on the PR-7200 power regulator. You can see how nicely and neatly the wires are arranged in the "after" photo (*Figure 15*). The blue and white wires will be connected to the lock, and the red and black wires will be connected to the power supply. This simplifies things and keeps the connections from getting confusing. This is an example of one of my favorite acro-

nyms that I like to follow and apply: KISS. "Keep it simple, stupid!"

Next, I made the connections from the lockset to the PR-7200 power regulator using the supplied B-connectors. The final connections are shown in *Figure 16*.

Here are the connections for the 24 VDC (the connections for 12 VDC are different):

- 1 The black and blue wires together from the lock.
- 2 The blue wire from the PR-7200 power regulator to the red wire on the lock.
- 3 The white wire from the PR-7200 power regulator to the white wire on the lock.



“There were a few things that quickly came to my mind as to what the problem could be: bad reader, bad lock, power issue or simply the programming in the access control system.”

Once all connections were made, I installed a piece of heat shrink tubing to keep everything neatly in place (*Figure 17*). Using my electric heat gun, I applied heat to the heat shrink tubing. (*Figure 18*). *Figure 19* shows the final neatly arranged and organized wires. The lock is ready for installation.

At the Site

The installation was straightforward. First, I installed the latch into the door (*Figure 20*). The manufacturer's label on the lock clearly indicates that the latch provided with the lock must be used. *Figure 21* shows the label.

Then I connected the red and black wires from the lock to the power wires that were in the door (*Figure 22*). The connectors in the photo are blue because I used Dolphin Super B wire connectors with sealant.



Figure 17. A piece of heat shrink tubing keeps everything neatly in place.



Figure 18. The author applied heat to the heat shrink tubing.

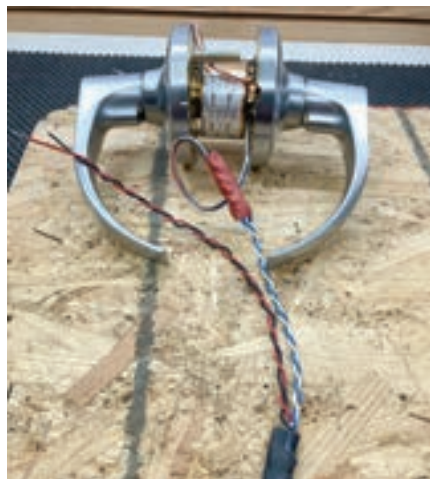


Figure 19. Everything is in place and organized.



Figure 20. The latch is installed.



Figure 21. The manufacturer's label indicates that the latch provided with the lock must be used.

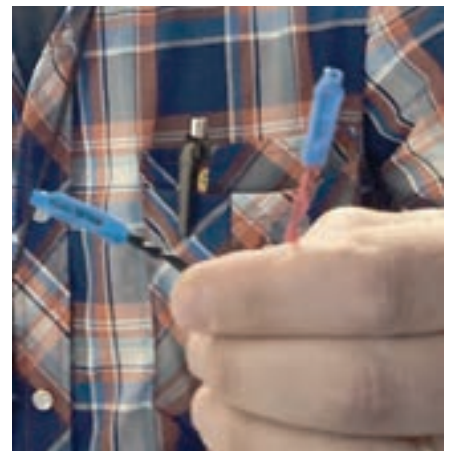


Figure 22. The author is connecting the red and black wires from the lock to the power wires in the door.



Figure 23. The author is installing the lock.

Finally, I easily tucked all the lock's wires into the door and installed the lock (*Figure 23*).

Since I installed the lock, my client has not experienced any more problems. The Groundhog Day insanity of constantly replacing the lock has finally stopped. Only time will tell, but I feel confident that his lock problem has been resolved once and for all. I think my client is happy to go through Groundhog Day just once a year now: in February, waiting to see if Punxsutawney Phil sees his shadow.

Bonus Tip

About wire connectors and crimping



Figure 24. These are the connectors before use.



Figure 25. This is what a good crimp looks like.



Figure 26. The author likes using these Sta-Kon (Thomas & Betts) crimping pliers.

“The regulator has two wires in and two wires out.”

tools: It is important to use good quality connectors and a quality crimping tool when fastening wires together. The SDC Z7250GQ came with Dolphin B connectors, also commonly known as “Beanies,” that I used to connect the PR-7200

power regulator to the lock. *Figure 24* shows the connectors before I used them. *Figure 25* show what a good crimp looks like. I have used these Sta-Kon (Thomas & Betts) crimping pliers for a long time, and they have always worked well. (*Figure 26*). There are other brands that make excellent crimping tools; I am just showing you what works for me. Use whatever you are comfortable with and what works. I went through many pairs until I found ones that really worked well for me. One of the nice features of the ones I use is that they have the terminal and wire gauge sizes stamped on the side head of the tool (*Figure 27*).

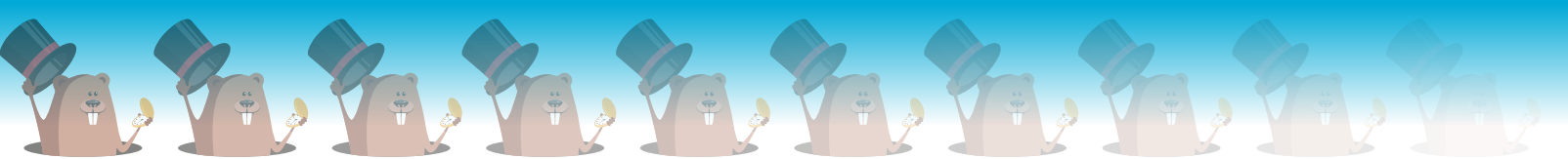


Figure 27. The author's crimping pliers have the terminal and wire gauge sizes stamped on the side of the tool.

- Use the correct crimping tool for the connector. Using the incorrect tool will result in a bad or faulty connection.
- Make sure that the connector is rated for the gauge wire that you are using.
- Properly insert wire(s) into connector. There should be no bare wire exposed. ⚙️



Rick Karas, RL, CFDI, AFDI, started in the locksmith industry in 1983. A licensed locksmith, he has experience with many physical security disciplines, including

access control systems, intrusion detection systems and video monitoring systems. He works in both commercial and institutional settings. Rick owns Phil-Rich Lock, which serves the Washington, D.C., metropolitan area.

Here are a few helpful general tips.

- Make sure that the connector has been properly crimped. A firm pull on the wire without the wire coming out of the B Connector is always a good test.
- Crimp the connector properly. It is

crucial not to break the connector or squeeze so hard that the metal conductor under the insulation is revealed. A connector that has been damaged can possibly lead to a short circuit or a point of an electrical failure.

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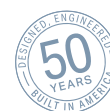


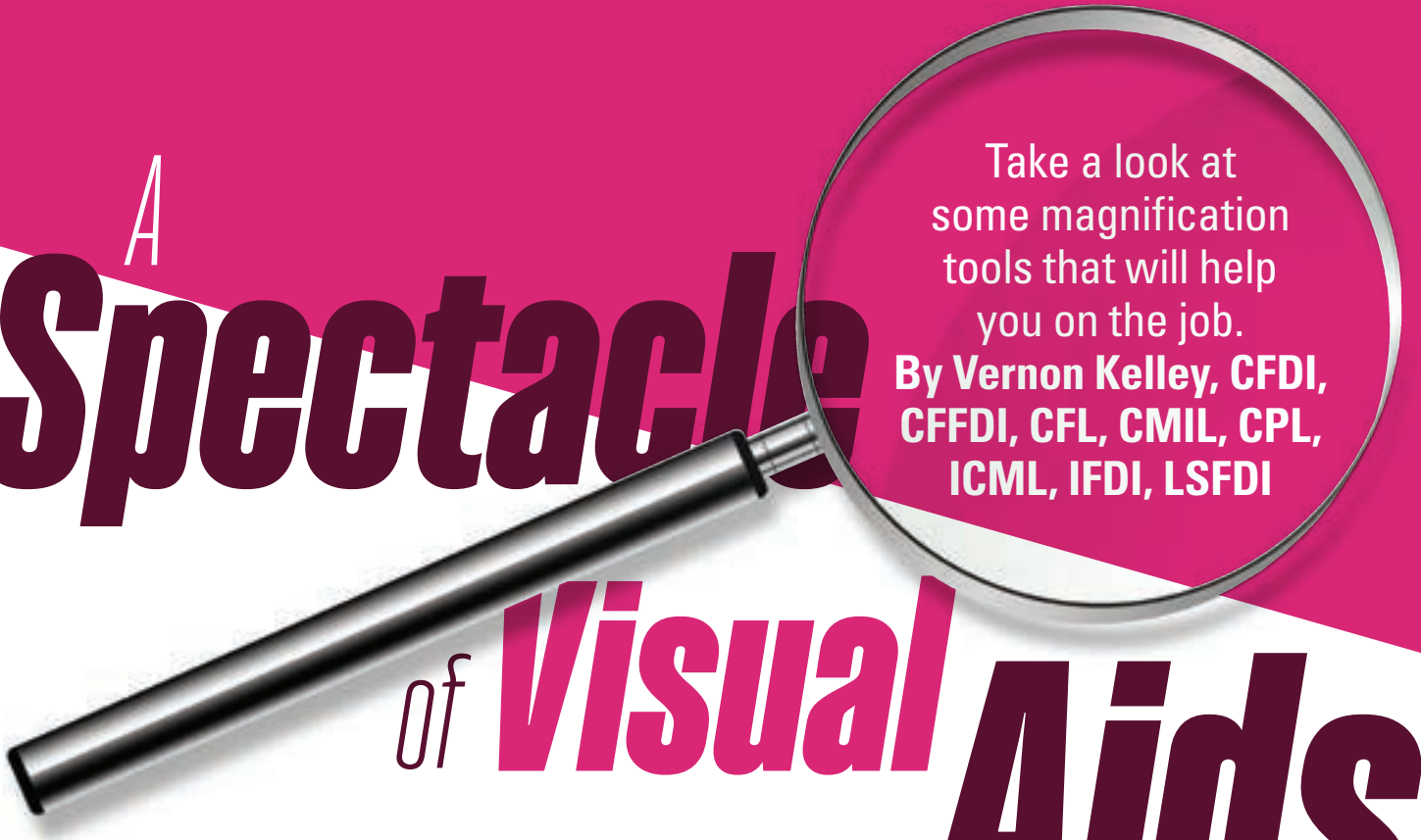
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A Spectacle of Visual Aids

Take a look at some magnification tools that will help you on the job.

By Vernon Kelley, CFDI, CFFDI, CFL, CMIL, CPL, ICML, IFDI, LSFDI

“WHY, ON GOD’S GREEN earth, am I standing on my toes?” I asked myself with more than a little irritation. Using an HPC 1200 code machine doesn’t usually involve acrobatics or any other great feats of physical exertion to operate, generally speaking. So, why was I turning this normal locksmith activity into a quasi-Olympic event? I couldn’t see the index numbers on the depth and space card.

I continued the discussion with myself, “Well, the window must be dirty.” I cleaned the viewing window on the unit. That didn’t change anything. So, I removed the viewing pane from the machine to clean the inside of the window.

That *had* to be the problem. It wasn’t. I was becoming far-sighted.

According to The Vision Council, 197.6 million (75.6%) of adults in the United States use some sort of vision correction. This includes reading glasses, prescription glasses and contacts. I begrudgingly admitted that I was now a member of that not-so-exclusive club.

The following weekend, two weeks before my 50th birthday, off I went to the nearest health(ish)-centric convenience store — with my 30% off coupon, naturally — to purchase my first pair of reading glasses. I suppose I can’t complain about it. I did manage to live almost half a century before needing such a device. I’ll take the win and keep whining about it to myself.

But, enough about my personal journey toward the need for visual augmentation equipment. I’m here to review my favorite visual aids, for your entertainment and knowledge. I won’t waste time reviewing glasses in the general sense. If you wear glasses, you already know what you need as far as lenses go and the style of frame you like or at least have a certain level of comfort with. I will highlight two readers that I’ve found especially useful while working. Perhaps they’ll be useful to you as well. And then I’ll delve into some of my other magnifiers, lenses, and microscopes I use regularly. Those of you who do investigative work especially might need some extra magnification.



Figure 1

Figures 1 and 2. These Clic magnetic reading glasses have a magnetic closure in the middle of the frame at the bridge.

“Those in the investigative locksmithing segment of our industry have something of an issue with microscopes: Most are too powerful for our needs.”



Figure 2

Clic Magnetic Reading Glasses Expandable/ Adjustable Temple Readers

First up are the Clic magnetic reading glasses (see *Figure 1*). There’s nothing special about the lenses. They’re just regular, 2.00 dilator lenses. The feature I love is how they hang on your neck when you’re *not* wearing them on your face.

These readers have a magnetic closure in the middle of the frame at the bridge (*Figure 2*). When you’re not using them, simply pull the frame apart and let them hang around your neck. But — unlike typical eyeglass straps/ holders/lanyards — Clic glasses don’t sway back and forth like a pendulum, especially when you’re bent over using machinery. The attachment on Clic glasses is more of a semi-rigid band

than a lanyard. When they’re hanging off your neck, there is substantially less swaying and much less chance of them getting caught in machinery.

When I purchased my first pair in 2018, they were about \$26. Inflation being what it is these days, they’re up to \$44. I think they’re still worth the price. I use them almost every day.

Sightline Multifocal Progressive Power Reading Glasses 6000

The second pair of readers I’ll highlight are the Sightline multifocal glasses. These readers are *not* bifocals. The lenses are designed to have three levels of magnification based on how we humans tend to use our eyes. They have anti-reflective coating, spring hinges, metal frames and

adjustable nose pads.

The top lens field is for seeing things farther away from you than the length of your arms. The middle field is for viewing a computer screen. Typically, a computer screen is at a viewing distance greater than what you would read a book at, which is about 24" away for most computer users. The third field is for actual reading, as we tend to read a book or process paperwork with our eyes cast slightly downward.

The Sightline glasses are remarkably well made and are still about \$27 a pair. They are great for working at a desk doing multiple tasks involving regular paperwork and computer work at the same time. This product is popular enough that they occasionally run out of stock on Amazon.



Figure 3



Figure 4

Figures 3 and 4. The Eschenbach easyPocket Compact Magnifier is small and has a powerful LED light.

easyPocket 3x Compact Magnifier With Light from Eschenbach

Getting away from readers, my next offering is perhaps my favorite visual assistant of all: the Eschenbach easyPocket Compact Magnifier (Figure 3). Eschenbach makes and distributes high-quality magnification solutions, including low vision aids, reading glasses and binoculars. This magnifier is German engineering at its best.

This magnifier is the exact length and width of a credit card, and about the thickness of four credit cards. It's very easy to carry. When you slide the magnifier out of its case, it also activates a very powerful LED light automatically (Figure 4). And, unlike many cheaper compact magnifiers that are similar in design, the lens has no distortion whatsoever.

At \$85, this magnifier is on the expensive side, but I've found it to be a very useful, quality product.

Carson TV-15 TriView 5x/10x/15x Folding Loupe Magnifier with Built-in Case

Carson Optical is the No. 1 manufacturer

of magnifiers and pocket microscopes in the country. The Carson TV-15 Magnifier is a very functional, rugged little tool. It's simple and easy to carry, and as there's no light, there's no battery to deal with. It's about \$12.

Carson MM-450 Pocket Micro 20x-60x LED Lighted Zoom Field Microscope With Aspheric Lens System

We're not quite done with Carson Optical just yet. Those in the investigative locksmithing segment of our industry have something of an issue with microscopes: Most are too powerful for our needs. The magnification "wheelhouse" for the examination of pins and wafers (and similarly petite lock parts) is 10-30x magnification. The Carson MM-450 (Figure 5) — while not the perfect fit for the forensic locksmith's needs — is usually sufficient for a cursory



Figure 5. The Carson MM-450 is usually sufficient for investigative locksmiths' needs.

examination of small parts or other trace evidence in the field.

Another problem I've encountered with pocket microscopes is availability. I've purchased other pocket microscopes in the past only to find them no longer available if I needed an extra microscope or if my original item broke. The Carson MM-450 has always been available. At \$14, it's a very good product for the price.



Figure 6. The Riester 3011 is manufactured for eye doctors and is great for looking into small areas without having to touch anything.



Figure 7. A second wheel provides a few lighting options as well as a viewing field with a “target.”

Riester 3011 RI-MINI Ophthalmoscope

Highlighting more German engineering, the Riester 3011 is manufactured for eye doctors (*Figure 6*), but don't let that stop you. This scope is great for looking into small areas without having to touch the lock in any way since the light and magnification are integrated. Keep in mind that this is *not* an otoscope, which is an apparatus more commonly found in a family doctor's office for ear and nose examinations.

The “focus wheel” has measurements from -20 to +20 magnification. For investigative or servicing purposes, you'll almost always be working with the positive magnifications, which are factors of 0, 1, 2, 3, 4, 6, 10, 15 and 20. A second wheel gives you the option of a couple types of lighting as well as a viewing field (*Figure 7*) with a “target.”

Since this scope is essentially a tiny projector, the trick to using it is to hold the scope a few inches away from the object you're viewing. This is an instrument that takes a little practice to use effectively, but it's well worth the 10 minutes of preparation and practice.

At \$170, it's a little pricey, but it's extremely well made and an effective tool for an investigative locksmith and perhaps for a safe tech. Additionally, it can be a little difficult to find this ophthalmoscope packaged for sale as an individual unit. It's almost always packaged as a set with an otoscope. Keep that in mind if you decide to purchase one.

Celestron 44308 Pro Handheld Digital Microscope

There was a time about 20 years ago when digital microscopes were considered



Figure 8. The Celestron 44308 “pro” version has a weighted base and an adjustable rail, so it stays steady.

something of a joke. No one is laughing anymore. Quality digital microscopes are relatively cheap, especially when compared to an analog scope with similar powers of magnification.

Please don't let the word “handheld” in the Celestron 44308 title fool you. Trying to hand hold a microscope can be quite a challenge, as any movement you make is dramatically amplified. But this “pro” version has a weighted base and an adjustable rail to make using the microscope a precise operation (*Figure 8*). There is holder/clamp to securely keep the microscope in place, so there aren't any issues using this as a hand-held implement.

The built-in camera is only 5 megapixels, but don't let that deceive you. The images it captures are usually sufficient (even for forensic examination), as it offers 20x - 200x magnification. With that said, I intend to upgrade to a microscope



Figure 9. If you use Celestron’s software, you can use the shutter button on the USB cable to take photos.

“There are scores of smartphone attachments available for augmenting your camera’s capabilities.”



Figure 10. The Xenvo WML-4515 kit contains wide-angle and macro lenses that are professional quality.

Xenvo WML-4515 Pro Lens Kit

There are scores of smartphone attachments available for augmenting your camera’s capabilities. Many are low-quality or gimmicky at best. The Xenvo WML-4515 isn’t one of them (*Figure 10*).

This kit contains two lenses: the wide-angle and macro lenses are professional quality. The lens clips onto your cell phone using what Xenvo call the Tru Grip lens clip. You need to take a little care when lining up the aperture of the Xenvo lens with the lens on your camera, but it’s not difficult and only takes a moment or two. Also, if you use a thick smartphone case cover like an Otterbox, you may have to remove it so the lens works correctly.

Another nice feature of the kit is the Glow Clip LED light (*Figures 11 and 12*). It’s rechargeable, with three levels of brightness. It also clips onto your phone if that lighting works for your phone. All the clips have rubber pads to protect your phone.

The wide-angle lens increases the camera’s field of view by approximately 45%. The macro lens — designed to take very close-up photos — was what really caught my eye.

To take an up-close photo, you’ll need something to hold the phone, like a small tripod, so it doesn’t shake. It’ll stabilize the phone because trying to take a macro photo by holding it usually doesn’t work very well. Next, set up your phone with

with more megapixels in the near future.

Lighting is crucial when taking microscopic images, so be sure you have a few lighting sources at your disposal.

With very little practice, you’ll be capturing images in no time since Celestron products are easy to use. While you can download software, you can usually switch the camera on whatever device you’re using and take a photo. However, if you don’t use the Celestron software, you may not be able to use the shutter

button on the USB cable to take photos (*Figure 9*). This may pose a problem if you’re using a PC that doesn’t have a touch-screen monitor, but it won’t be an issue if you’re using a touch screen. The USB cable also controls the brightness level of the microscope.

I purchased mine about five years ago for approximately \$105, but the Celestron 44308 is now \$160. Still, compared to an analog microscope (a decent one will run \$200 to \$400-plus), it’s still a good value.



Figure 11

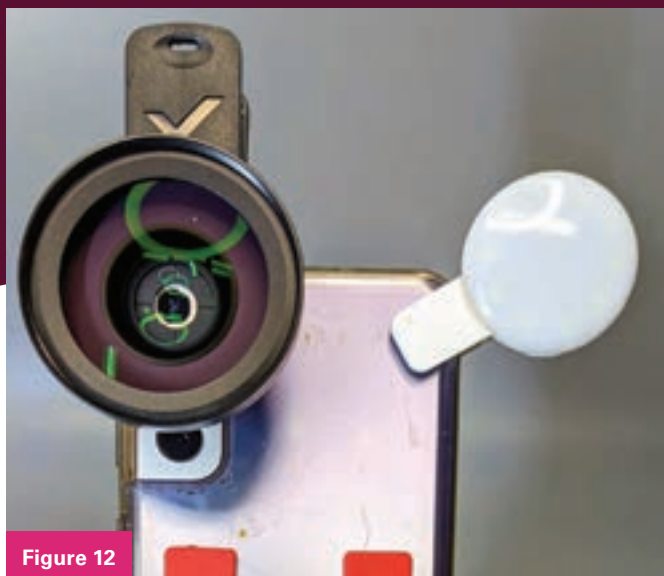


Figure 12

Figures 11 and 12. The Glow Clip LED light is rechargeable and has three levels of brightness.

the lens attached about ½" to 1" away from the object you want to take a photo of, and then take your photo. Also, you can resize the photo on your screen to make the image even bigger before you take the photo (Figures 13 and 14).

Here's another tip for taking macro photos with the Xenvo macro lens: Get yourself a Bluetooth shutter button so that once you have the picture framed the way you want on the screen, you can take the photo without having to touch your phone. That will help reduce any image blur even more. A remote shutter button costs \$10 to \$20.

The Xenvo Lens Kit is \$40, which is slightly more expensive than most other lens kits designed for use on smartphones. However, the quality of the lenses will more than make up for the price disparity.

Cozy Magnifier & Microscope+ App

Just like with photo-taking add-on lens gizmos for your smartphone, there are dozens of magnifier apps. I've tried at least seven or eight of these. I finally settled on the Cozy Magnifier & Microscope+ app.



Figure 13



Figure 14

Figures 13 and 14. With the macro lens in the Xenvo WML-4515 kit, you can resize the photo on your screen to make the image even bigger before taking the photo.

As you might have surmised, this app is both a magnifier and a microscope. The microscope has two magnification factors: 2x and 4x. The app also has numerous lighting controls and filters, plus a freeze button that starts a three-second timer when taking a photo to help stabilize the image. Control buttons are easy to understand, and the help section is easy to access and decipher quickly.

There is a free version, but I ponied up the \$4 for the pro version of the Cozy Magnifier & Microscope+ app. It's one of the most-used apps on my smartphone.

Naturally, I don't use each one of these visual aids every day, but at least I'm not standing on my toes any more, either. ☺



Vernon Kelley, CFDI, CFFDI, CFL, CMIL, CPL, ICML, IFDI, LSFDI, has been involved in the locksmith industry since 1989 and is a New Jersey licensed locksmith.

He is the proprietor of Vernon Kelley Security Consulting, LLC. A noted instructor, writer and expert in fire and life safety codes in the means of egress, he's co-author of the book *Institutional Lock Shop Management*. Vernon is currently the first trustee of ALOA Institutional Locksmiths, secretary for the ALOA Scholarship Foundation and an ALOA SPAI non-voting director. He's a recipient of the Lee Rognon, AIL Influential Leader, Robert Gress, Gerald J. Connelly, Jr. Pioneer and Ray D'Adamo ACE Instructor of the Year awards.

The Easy Way Out

When you complete an installation via the path of least resistance, problems can ensue. **By Tony Wiersielis, CPL, CFDI**

RECENTLY, WE DID A RETROFIT ON AN ENTIRE SCHOOL DISTRICT IN A small town in central New York. We were installing Kaba E-Plex locks in place of existing mortise and cylindrical locks. We were also replacing panic trims with E-Plex trims on existing panic bars, mostly Von Duprin. Most of the work was cylindrical locks on classroom and office doors. Almost all the doors were wood, and that's where things got interesting — and not in a good way.

A lot of the classroom doors had old Unit Lock preps, as you'll see shortly. We wound up using the existing strikes because the company that hired us to do the install hadn't thought about that, and they were pressed for time. The school district was fine with it.

Now comes the “fun” part we had to deal with. *Figure 1* shows one of the doors we worked on; notice the very bottom of the door. *Figure 2* is a close-up view of it. It's fairly obvious that somebody used an electric plane on the lock edge of the door while it was still hanging. That's why the very bottom of the door still has a few inches of the original finish; the front of the plane stopped at the floor. In *Figure 3*, you can see

a close-up view of how the plane sniped the top of the door.

I know why they did it. We found quite a few doors that were tight against the frame, and this was their answer to the problem. It's not the right answer as far as I'm concerned — and, honestly, I see this all the time in varying degrees of severity. The craziest thing I've seen is when someone planes the top lock edge of a door because it's rubbing the frame but never thinks to tighten the screws on the hinges. One of the problems with spot planing is that the door is no longer square.



Figure 1. Here is one of the doors the author worked on.



Figure 2. You can see how the very bottom of the door still has a few inches of the original finish.



Figure 3. It's visible how the plane sniped the top of the door.

The Right Way

Here's what I think is the right way to do it, as I was taught decades ago by my first boss, Vito Monaco. This is a two-man job. We would remove the door from the frame and the hinges from the door. With the hinge side facing up, we went around the sides of the hinge mortise with the flat side of a chisel against the edges of the mortise. We rapped down on the chisel to prepare for deepening the mortise.

With one of us holding the door steady, we started on one end with an electric plane. The key is to use the fence on the plane and hold it tightly against the door to follow the bevel. It's also a good idea not to pause while you're planing, and it's really important to stop the plane before you get to the end of the door.

Look back at *Figure 3* at that snipe mark. That's what happens when you plane past the edge of the door. This is because the front and back base plates of the tool are at slightly different heights to do the cutting. When the front plate passes off



Figure 4. A Lie-Nielsen Butt Mortise plane can be helpful in ensuring you have a flat mortise.

the door, the plane dips down and causes the snipe — and often splinters on the top or bottom of the door. You avoid this by coming back the other way until you remove what you didn't cut on the first pass.

Usually, we did several shallow passes with the plane rather than trying to take off $\frac{1}{8}$ " in one pass. Once we took off as much as we thought we needed to, we would begin to deepen the mortises, always testing the depth with one of the hinges. Sometimes, we wound up taking off enough wood that the hinge bed was even with the planed edge. That's the reason we went around the edges of hinge bed with the chisel first.

Deepening the hinge bed can be done with a chisel or a router. Bear in mind that the bottom of that mortise has to be absolutely flat. Otherwise, the hinge may bind. There is another alternative that I've found to work very well. *Figure 4* shows a website shot of a Lie-Nielsen Butt Mortise plane. I have one of these, and I've used it many times in this situ-

ation. You can see that the blade projects through the bottom plate of the plane. Through that opening, you can clearly see what you're doing.

What's neat about this type of tool is that you don't need electricity. With a little practice, you'll have a dead-flat mortise with no risk of going too deep. Once you set the depth, it takes almost no time to get it done. Veritas is another company that makes this type of plane. They aren't cheap, but they save a lot of time.

Back to the door. Once we finish remortising the door, we use a sanding block to blunt the sharp corners left by the plane and rehang the door. We aren't doing any kind of painting or refinishing, and we tell the customers that before we start so they don't have any unrealistic expectations. It's their job to take care of that. The funny thing is that, most of the time, they don't bother doing anything. I know because when I go back to a building for other work, I can see the bare wood.



Figure 5



Figure 6

Figures 5 and 6. Notice how high the locks are on these two funky installations.



Figure 7. Whoever did the installations used the old deadbolt holes and strike — but the old preps were for mortise deadbolts.

Easy Way Out?

At the same school, we ran into these two funky installations (*Figures 5 and 6*). These installation gems lead into the kitchen area from the cafeteria. From the looks of these doors, it seems that they grabbed whatever wraparound plates were lying around to make them work. Notice how high the locks are. Not exactly ADA standards.



Figure 8. The author is checking to see if the wraparound would cover the top hole.

When I opened one of the doors and looked at the frame, it all made sense. Whoever installed the locks decided to use the old deadbolt holes and strike. The trouble with that was the old preps were for mortise deadbolts (*Figure 7*). You can also see that they had some issues drilling the cross-bore hole. Maybe they used a jig that slipped, and they didn't notice. The

“There have been many times that I had to make do with what existed, but this wasn't one of those times.”

newbie I was working with said he was just going to install the new cylindrical locks where the existing lock had been. I stopped him and told him to wait until I figured it out. *Figure 8* shows me holding the wraparound against the door to check if it would cover the top hole. You see my jig there because that picture was an afterthought. The newbie went on to do some outside doors.

More on the Doors

Let me elaborate on those two doors. Whoever installed the locks at that height was taking the easy way out — probably because there was no strike hole, and they didn't know what to do about that. They could have left the old deadbolt and cut a rectangular strike hole at the appropriate height with a Dremel. The corner of the frame will push in the latch if there's no room to surface mount a strike. We do it all the time.

I'm not going to compound somebody else's lousy job because it's easy. To me, it's important to do the right thing for the customer who's paying the bill. There have been many times that I had to make do with what existed, but this wasn't one of those times. As you'll see in the following pictures, it wasn't simple to do what I felt was the “right thing.” But, it worked out well. Back to the story.



Figure 9. The electric plane bandits were at it again.



Figure 10



Figure 11

Figures 10 and 11. They took 1/8" off the door.



Figure 12. The red arrow points to the bottom of the chiseling the author did for the wraparound to fit.



Figure 13. The author used this 2" chisel on the job.



Figure 14. The author used a vibrating tool to make room for the latch pocket in the plate.

Figure 9 shows that the electric plane bandits were at it again; they didn't even go most of the way down the door. Figures 10 and 11 show that they took 1/8" off the

door. In Figure 12, the red arrow points to the bottom of the chiseling I had to do for the wraparound to fit and be plumb. If they had planed further down, I wouldn't

have had to waste my time using this 2" chisel (Figure 13). I used a vibrating tool (Figure 14) to make room for the latch pocket in the plate.

Figure 15 shows a modification I did to the plate to make room to stash the excess wire that passes from the outside to the inside of the door on one of these locks. See that figure eight hole between the top two



Figure 15. Here's a modification to the plate to make room for stashing the excess wire.

holes? Neither hole was there before. There was supposed to be one where the top hole is, and we were modifying the plate as we worked. I added the overlapping hole to get more room for the wire, and it worked.



Figure 16. This is a 1" hole drilled on the lock edge of the plate and on the same centerline as the top hole of the figure eight shown in Figure 15.

Figure 16 is a genius move figured out by one of my co-workers. That's a 1" hole drilled on the lock edge of the plate and on the same centerline as the top hole of the figure eight shown back in Figure 15.



Figure 17. Here are the contact and magnet that come with each lock.



Figure 18. Here's a finished contact installed through the 1" hole in the wrap.



Figure 19. This is another view of the contact and the completed E-Plex installation.

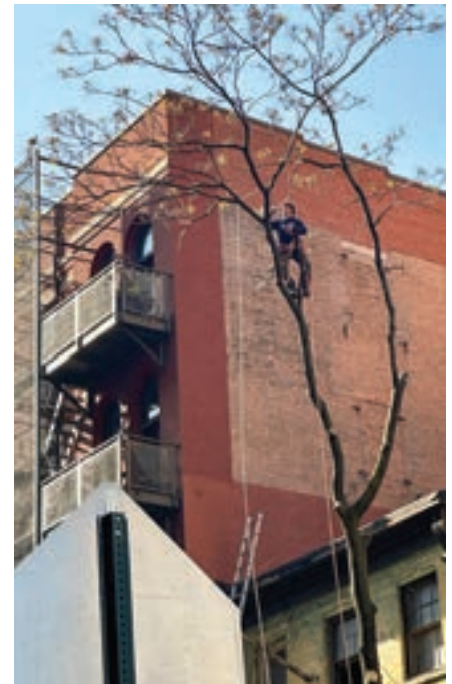


Figure 20. Remember: Safety first!

Figure 17 shows the contact and magnet that come with each lock. The diameter of the switch body is $\frac{3}{4}$ ".

Many times, we found that we didn't have any rubbing of the wraparound plate on the frame, but it was close. If we then drilled a $\frac{3}{4}$ " hole through the plate and surface mounted the contact, there was a good chance it would rub against the magnet, which was surface mounted on the frame.

Figure 18 shows a finished contact installed through the 1" hole in the wrap. The contact is installed in a $\frac{3}{4}$ " hole in the wood. It lays flat on the door and is not protruding past the plate, preventing the rubbing problem.

Here's the process for doing this. The wrap is installed on the door, and a $\frac{1}{4}$ " pilot hole is drilled through it and the wood until it comes through the top hole of the figure eight modification. Remove the wrap and drill a 1" inch hole through it using the pilot hole. This is easier to do if you slide the wrap over the narrow edge of a piece of 2 x 4.

Once the 1" hole is drilled, the wrap is reinstalled on the door. Now take a $\frac{3}{4}$ " hole saw with a pilot bit or the same diameter spade bit and drill until you hit the top hole. Figure 19 shows another view of the contact and the completed E-Plex installation as well.

I saw what's shown in Figure 20 across the street from my shop in Manhattan

last month. It was fascinating to watch this guy methodically cutting down that tree. At that point, he was even with the fourth floor of the building to the left. I had broken my ankle coming off the second step of a 4' ladder, and I kept thinking about what would happen if the skinny part of the trunk he was on should crack below him. Stay safe out there. ☺




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

"Deepening the hinge bed can be done with a chisel or a router."

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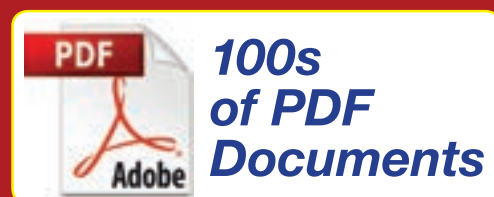
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