The official publication of ALOA SPAI, an international association of security professionals April 2018

KEYNOTES

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Data analysis of members' pricing practices

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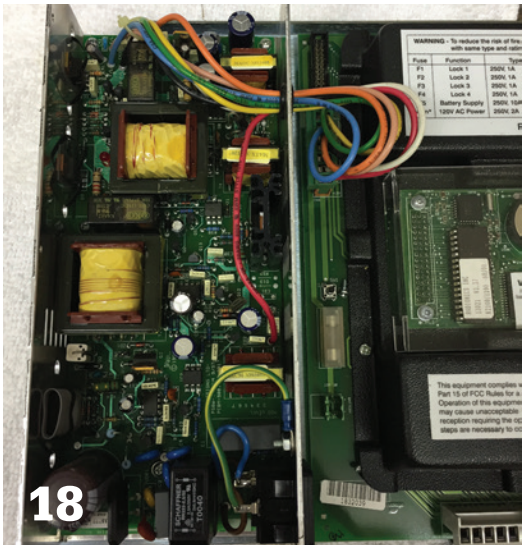
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KEYNOTES

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

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Make Your Convention Plans

I would like to thank all of the members who emailed me and gave me their thoughts and opinions on the subject of licensing. It was very interesting to see all of the diverse opinions on the subject and nice to know that many of our members are taking the time to read *Keynotes* magazine.

I would also like to publicly thank Jackie and Steve Bright for all of their hard work putting on the NCLA tradeshow and Barbara McGowin for all the hard work she put into the ALA tradeshow. I was able to attend both shows and they were both very well organized and successful.

In this issue of *Keynotes*, you will notice that the annual pricing survey is included. I would like to caution everyone that this survey should not be used to set your prices by. The answers to the survey came from many different members from all different markets. Some might be from large metropolitan areas, while others may be from very rural areas. Some areas may have very few locksmiths, while other areas may have a very high saturation of locksmiths. However, it can be interesting and useful to see what others are charging for services in different parts of the country. When setting your prices, you should take many things into account, such as the full cost of the goods being sold, the market you're in, your skill level (or what you're worth), and even the percentage of profit you would like to make. So, I hope everyone enjoys looking through the pricing survey and finds the information useful — just don't set your prices based solely on any pricing survey.

Now I would like to address all of our safe technicians. If you have not already made plans to attend SAFETECH this year in Milwaukee, you should make plans to attend now — it's not too late.

"Now I would like to address all of our safe technicians. If you have not already made plans to attend SAFETECH this year in Milwaukee, you should make plans to attend now — it's not too late."

Even if you are not a full-time safe tech but would like to add safe work to the services you already offer, you should plan on attending. Pick up a class or two so you can add to your bottom line. Also. while you're at it, you should make plans to attend ALOA 2018 in National Harbor, MD! It looks like it will be a really good show with a lot of sites and attractions to see. If you have children on summer break, you can make it a family vacation, and the kids can have some fun learning about our nation's history and its capital. I sincerely hope to see you at both events!

I hope that everyone is having a good and prosperous year, and I hope to see you soon!

Best regards,

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

Important Notices for Members

As we get further into the year, it's time for a few notices and reminders for members.

Membership Renewal

Thanks to all who have renewed memberships for 2018. Many changes are occurring in the industry, and ALOA needs your continued support to stay abreast of them. Any membership that is not renewed by April will be inactivated. So, don't delay; if you haven't had a chance to send in your payment, do so today! To make payment arrangements, please contact the membership department at membership@aloa.org or give us a call.

Professional Development

In addition to enhancing your professional development and networking with add-on memberships in specialized groups (IAIL – the International Association of Investigative Locksmiths, AIL – ALOA Institutional Locksmiths, SAVTA – the Safe and Vault Technicians Association and ALOA Latino – serving Mexico and beyond), ALOA SPAI is always reviewing services to add as additional member benefits. For 2018, we are looking at adding at least three new programs:

- A new Tech Pavilion on the ALOA Convention show floor with mini training sessions, industry tech talks and new product introductions.
- First IAIL Forensic Conference, October 18-21 at the Aaron M. Fish Security Training Center, Dallas, TX.
- High-quality online training that can be viewed from the comfort of your home or business.

Annual Conventions

The registration for the SAFETECH 2018 — which is scheduled for April 30 to May 5 — is now open. You may register online at www.savta.org.

The ALOA 2018 convention brochure is included with this issue of *Keynotes* magazine. Please take a few minutes to check it out. This is a new venue for ALOA, and we have plenty of new classes to go along with it. You don't want to miss this year's convention. Please email conventions@aloa.org if you have any questions about the program or venue.

Call for Volunteers

If you are planning to attend either of the conventions, contact us at conventions@aloa.org about volunteer opportunities. We'll send you a form so you may let us know your hours of availability and the area that you'd like to help out in.

Thanks again for your continued support of ALOA SPAI!

Mary A. May

Mary A. May
Executive Director
mary@aloa.org

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1st Update Opens Securam ProLogic Series

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Dave McOmie "The Little Black Box has spoiled us rotten!"

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What's New

Industry News, ALOA News, New Products and More

Congratulations to Our Winning Members!

Two lucky ALOA members won fantastic prizes — just by renewing their memberships! Bennie W. Mitchell won the Bianchi Easy key machine, valued at $1,200, by renewing by September 15, 2017. Amy N. Ardrey won a Punto key machine by renewing by December 31, 2017.

ALOA SPAI gives away so many prizes each year, from equipment and ALOA Bucks to convention packages and individual classes. Want your next shot at winning? Attend the 2018 ALOA Convention & Security Expo in National Harbor, MD, July 8-14 and win giveaways on the show floor!

ASSOCIATION NEWS

ALOA Northeast Director Bill Mandlebaum, CML, recently attended the Intermountain Lock & Supply Security Expo in Seattle, WA, where he represented ALOA and promoted the association.

IN MEMORIAM

Roy Yetter of Houston, TX, passed away February 4. An ALOA member since 1974, he was also active in the Greater Houston Locksmiths Association and Texas Locksmith Association. He worked for 50 years at Howard Safe & Lock Co.

James (Jim) Francis Maloney, 71, of Shoreline Locksmith in Mystic, CT, passed away January 15, 2018. He had been an ALOA member since 2009.

NEWS BRIEFS

Sargent and Greenleaf, Inc., a subsidiary of STANLEY Security, has appointed Keith Deaton as chief operating officer. Deaton joined STANLEY Security's finance team in 2010 and most recently served as S&G's chief financial officer and interim CFO (Canada). He has been in the security industry since 2005 and will assume the responsibilities previously managed by Brian Leary.

The free 36th annual edition of the **Ilco** North American Auto/Truck Key Blank Reference is now available for download from www.ilco.us under Literature & Support, Key Directory & References. Printed copies will be available from Ilco distributors in late April.

HES and **Securitron** are now officially united as ASSA ABLOY Electronic Security Hardware. With this transition comes a new website (assaabloyesh.com), catalog and pricelist as well as packaging. Existing products will remain available, and there are plans to expand offerings in cabinet locks, power supplies and low-power locking solutions. The individual HES and Securitron websites (hesinnovations.com and securitron.com) will now redirect to Electronic Security Hardware.

Anixter International Inc. has announced that Robert J. Eck will retire as chief executive officer at the end of June after being with the company for 28 years, with 10 of those in his current role. He will continue to serve on the company's board of directors. Effective July 1, William A. Galvin will become president and chief executive officer. He has served as the company's president and chief operating officer since July 2017, and for 12 years has served in a variety of senior management positions with Anixter Inc., the company's operating subsidiary, most recently as Executive Vice President - Network and Security Solutions.

Allegion has agreed to acquire Aurora Systems, Inc. (AD Systems) through one of its subsidiaries. The transaction is expected to close in the first quarter of 2018. AD Systems designs and manufactures high-performance interior and storefront door systems, specializing in sliding and acoustic solutions. AD Systems' portfolio includes sliding and swinging doors, perimeter frames, door hardware, gasketing, seals and sidelite panels under its ExamSlide, OfficeSlide and InsetSlide product brands. The company is based in Everett, WA. Following the closing of the transaction, AD Systems is expected to operate within Allegion's Americas region, and no immediate changes are planned for the business.

PRODUCT BRIEF

Securitron has launched the M680E EcoMag Magnalock. The Securitron M680E EcoMag Series offers increased holding force of 1,200 lbs. and up to an 80% reduction in energy consumption over the previous Securitron M680 model, with average current draws as low as 60mA. It includes a new strike plate mounting template and optional integrated PIR Request to Exit and intelligent door prop sensing features.

FLORIDA

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Architectural Builders Supply, Inc.
Richard L. Howard
Architectural Builders Supply, Inc.
Anna K. Howard, MS

IOWA

Altoona
Mid-Iowa Locks, Inc.
Joshua R. Howdle
Sponsor: David M. Howdle

Des Moines
Strauss Safe and Lock
Chad Breheny
Sponsor: Dan Swift

KENTUCKY

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Jewish Hospital
(KentuckyOne Health)
Barry J. Wheeler
Sponsor: James W. Frazier

Mount Washington
Jewish Hospital
(KentuckyOne Health)
Tobey W. Ward
Sponsor: James W. Frazier

LOUISIANA

Ponchatoula
Hollotec LLC
Martin T. Holloway

MARYLAND

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Metro D.C.
Duncan E. Robinson
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Laura Tonnini
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Locksmith
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Sponsor: Francisco A. Orellana

Vienna
Navy Federal Credit Union
Adam P. Beall

CANADA

Montreal, QC
Serrurier Urgence Montreal

HUNGARY

Baranya Pecs

These applicants are scheduled for clearance as members of ALOA. The names are published for member review and for comment within 30 days of this *Keynotes* issue date, respectively, to ensure applicants meet the standards of ALOA's Code of Ethics. Protests, if any, must be addressed to the ALOA membership department, signed and submitted via e-mail to membership@aloa.org or via fax to 214-819-9736.

We Need Your Help

Attention, ALOA members: Help us eliminate the ongoing industry problem of scammers by screening the new applicants listed on these pages. If you have questions or concerns about any of the applicants, please contact Kevin Wesley, membership manager, at (214) 819-9733, ext. 219, or email kevin@aloa.org.

ALOA CERTIFICATIONS

CRL
Nathan Wichern of Springfield, MO

CLL
Alexander D. Jones of New Orleans, LA

CALENDAR

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

APRIL

April 26-27
IDN Hoffman
Classes TBD
Omaha, NE
See ALOA Calendar

April 30-May 5
SAFETECH 2018
Hyatt Regency Milwaukee
333 West Kilbourn Avenue
Milwaukee, WI 53203
conventions@aloa.org or (800) 532-2562, ext. 240

MAY

May 14-19
Six-Day Basic Locksmithing
ALOA Training Center
Dallas, TX
education@aloa.org or
(800) 532- 2562, ext. 101
This class is also being offered at the ALOA 2018 convention in July, October 1-6 and December 3-8.

JUNE

June 21-23
2018 Southern Lock Trade Show & Learning Expo
Learning Expo: June 21-22 at Hilton St. Pete Carillon Park, Trade Show: June 23 at the St. Petersburg Coliseum
St. Petersburg, FL
www.southernlock.com

JULY

July 8-14
2018 ALOA Convention & Security Expo
Gaylord National Harbor
201 Waterfront Street
National Harbor, MD 20745
conventions@aloa.org or (800) 532-2562, ext. 240

OCTOBER

October 18-22
IAIL Conference
ALOA Training Center
Dallas, TX
See ALOA Calendar

Forensic Classes Available in 2018

Division President Tom Demont provides the dates for class availability — and a few reasons why you should enroll.

2018 is here, and I'm trying to figure out what new forensics equipment or classes I can take with my refund under the new Trump tax bill. I ordered a Lyman Borecam to add to my inspection bag of digital scopes. As a forensic investigator, you must be able to examine inside the safe or lock through any holes left by someone attempting to gain access so that you can prove if the holes found would allow someone to gain access or not.

I will be in Milwaukee at SAFETECH the first two days in May teaching the investigative locksmith class to students who would like to start training for forensic investigating and eventually sit for the Certified Forensic Locksmith (CFL) examination. Even if you do not pursue a career as an investigate locksmith, the knowledge you acquire will make you a better locksmith in servicing your customers.

If SAFETECH and Milwaukee are not in your travel plans this year, you still have two chances to sign up for forensic classes. ALOA will hold its 2018 Convention and Security Expo at the Gaylord National Harbor, which is south of Washington, D.C., at Indianhead/Fort Washington, MD, and across the Potomac River from Old Town Alexandria, VA. The last opportunity you'll have this year is in October at the IAIL Forensic Conference at our training center in Dallas, TX.

Another interesting thing happened as I was achieving more credentials: My expert witness business started picking up through the referral agencies. With each credential, I would update my CV (curriculum vitae, which is essentially a super enhanced resume), and potential clients would read it and contact me about cases. It boosted my retirement income by $15K average each year. So, for expert witness, the more credentials the better! The nice thing about most credentials is that once you have them, they are yours for life and look great on your CV.

What I like about locksmiths becoming forensic investigators is that they have the talent and the knowledge to make great investigators. In all of the CSI shows you've seen, have they ever investigated the inner workings of a lock or explained the dynamics of a master key system — and how you have less security in this type of system? The reason you haven't seen these is because our work is too complex for their 60-minute program. I was at Keedex last night, and George Hill was showing me his locks that were used in the movie "The Italian Job" where they drilled open this massive vault. George pointed out that when they did a close-up of the time lock, it was upside-down in the movie, rendering it deadlocked. It pays to hire a good expert, but George pointed out that only we nerdy locksmiths would spot that — just like we laugh when someone picks a lock with only a rake and it turns nice and smooth. Not!

Think about forensic locksmithing as an expert witness; this makes a great retirement profession, and it draws on all those years of knowledge you have locked up in your mind that will go to waste unless you put it to work doing less physical work… just exercising your brain. If you haven't joined IAIL, do it now, and it will be the best $50 you've ever spent next to your ALOA/SAVTA dues. Contact me for more information on this exciting new career.

Tom Resciniti Demont, AHC, CAI, CFDI, CFL, CMIL, CML, CMST, ICML, IFDI, LSFDI, ARL, President, International Association of Investigative Locksmiths, IAILPresident@aloa.org.

Get Published!

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

On Deck: SAFETECH

SAFETECH is coming up fast, and registration will open soon for ALOA 2018. Don't miss these two favorite events!

SAFETECH will soon be here. We hope you're joining us in Milwaukee April 30 to May 5 at the Hyatt Regency Milwaukee. Take charge of your future with the best classes in the industry and unparalleled networking. If you haven't made your hotel reservations, hurry! The cut-off date to receive the group rate is April 5, so don't delay. Reservations can be made by calling the hotel toll free at (888) 421-1442 or the hotel directly at (402) 592-6464 and using the group name "SAVTA" or "SAFETECH."

Don't miss the fun events at SAFETECH: the Kick-Off Party, Swap Meet and Friends of SAVTA Live Auction. If you'd like to donate items to the auction, they must be received at ALOA/SAVTA headquarters by April 18. For more information or a request form, please contact conventions@aloa.org.

ALOA Convention & Security Expo

We're so excited to provide more information and open up registration for this year's ALOA Convention! Please see the full brochure included with this issue of *Keynotes*, or go online to www.ALOA.org and click on the ALOA Convention tab. Make plans NOW to attend ALOA 2018 July 8-14 in National Harbor, MD, just outside of Washington, D.C.

ACCESS VALUE LEARNING

ALOA2018

With three airports nearby, it's never been more convenient to find flights that meet your schedule and budget. And with so many local transportation options — from trains and shuttles to water taxis — travel to the host hotel and convention center is so easy.

Everything is located all in one very pedestrian-friendly location, the Gaylord National Resort & Convention Center. Not the typical Gaylord, this smaller-scale property offers convenience and walkability inside the hotel and convention center. Book your room now by calling (877) 491-0468 and referencing group name ALOA, or book from the hotel link on the convention page on ALOA.org.

Get access to the best value in education! Take classes such as Hinge Service, Access Control Tech Simplified, EEPROM and MCU Fundamentals, Master Keying Best Practices and M3/X4 Medeco Factory Certification. For more details and the full class schedule, see the convention brochure included with this issue.

ALOA 2018 will have many events that allow for networking and camaraderie with your fellow security professionals. Don't miss the Kick-Off Party Thursday night or the Membership Meeting Friday morning. And all of our women attendees are invited to the Women in Locksmithing reception at 5:45 on Thursday, just before the Kick-Off Party. Come meet a mentor — or be one for someone else.

The Security Expo gets started at 10 a.m. on Friday, July 13, so make plans to stay through Saturday — it's going to take a full two days to get through all of the new products and make connections with all of the manufacturers and suppliers!

Please contact conventions@aloa.org with any questions. We can't wait to see you there!

Key Insertion and the Spoliation of Evidence

Jeff Lange, PE, CFL, discusses some considerations for investigations and how to protect evidence.

One of the many issues faced by forensic locksmiths is the decision to insert a key into a lock as part of the analysis process. In general, the forensic locksmith industry has accepted the practice of key insertion into a keyway in question if several guidelines are followed. However, many forensic locksmiths have been challenged by the practice with the allegations of evidence spoliation — the concept being that even a single insertion of a key into a subject keyway can alter that keyway (and/or key) and "spoil" the evidence. This article discusses the issues associated with key insertion so the investigative locksmith can make an informed decision regarding his forensic lock analysis while making a case for the necessity of the practice.

Recommended Guidelines for Key Insertion

In the past, key insertion was an unavoidable necessity and considered an integral part of forensic lock analysis. In fact, many trainers (me included) instructed their investigative locksmith students without concern for the issues raised in opposition of key insertion. However, as time went on and advocates for individual methodologies became more vocal, the practice of key insertion became the foundation of challenge.

After a long period of disagreement (by a small minority of forensic locksmiths) and without common ground to be found, the majority of forensic locksmiths agreed that following some simple guidelines would protect against evidence spoliation should the investigator choose to use key insertion in his/her process. Such guidelines include:

1. The key to be inserted is first determined to be a known operational key for the lock. This is not always an easy task, but it is essential.
2. The key — prior to insertion — has been proven by examination to have no defect or anomaly that may alter the interior of the lock, or otherwise change the internal character. In turn, no markings or anomalies that may be altered by insertion exist on the key itself.
3. Examination of the contact surfaces of the key reveal no markings associated with its use as a master or pattern key in the duplication process.
4. Examination by otoscope (or ophthalmoscope) has revealed no evidence of the insertion of an object into the keyway other than a regular use key. Such objects may include a pick, rake or modified key used to manipulate the tumblers within. Other objects may include tools used to attempt forced rotation of the cylinder.

A number of investigators presented with the allegation have performed their own testing to establish the effects of key insertion using the above — or some variation of — the stated guidelines. The results revealed that limited insertion of a key into a lock under investigation has been shown to have no identifiable effect on the contact surfaces within the lock except for some very unusual circumstances. Sadly, the individual test results have never been published. It should be noted that testing circumstances such as forced extraction of the key from the keyway revealed that a single insertion of the key may alter the contact surfaces within a lock and therefore can be considered "destructive."

A destructive test or procedure is one that alters the condition of the evidence from (or closest to) the time of the event under investigation. Destructive tests and the disassembly associated with them are generally not reversible and, as such, the evidence under scrutiny is forever changed. However, destructive testing is essential to performing certain examinations, such as microscopic analysis. To examine the contact surfaces of wafers in many locks, especially automotive, the cylinder must be cut or dissolved apart and therefore is permanently altered. Altering evidence without the proper consent or the participation of other involved parties

can result in allegations of evidence spoliation. Such allegations can put you and your findings at risk.

Key Insertions

During conference polling of forensic locksmiths and as discussed above (independent, unpublished testing), classifying key insertion as a destructive test was overwhelmingly dismissed when done under the proper conditions. There is also a logic associated with this position based on the design of the lock, intended life expectancy and nature of the materials from which the tumblers and keys are made.

The construction materials keyway and design of the cylinder determine how the individual parts wear. Wear is the direct result of contact, pressure and movement. Wear in locks occurs when the key contacts the spring-loaded tumblers and forces them out of its way and into a position associated with the cut depth on the key. In automobiles, additional wear develops because of the movement of the key within the lock while the vehicle is in operation. The wear is exacerbated by the additional weight placed on the key by other dangling keys, key chains and other items often linked to a key ring. However, most vehicles never require replacement of the ignition lock or key due to wear during its entire service life. This is because the ignition and door locks to an automobile are designed to last the life of the vehicle.

Typically, the automotive industry accepts the life expectancy of a vehicle to exceed 100K miles of operation. If a driver drives the average distance per year, now accepted to be 12K to 15K miles per year, one could suggest that the vehicle's operational life expectancy is at least six to seven years. Although there are no published criteria on insertion ratios (the number of key insertions relative to vehicle mileage), it would be reasonable to assume that the average driver would insert the key into the ignition multiple times per day. Let's say, for this example, four times per day. If the operator inserts a key in the ignition four times per day, 250 days per year, the ignition key is inserted in an ignition lock 6,000 to 7,000 times over the life of the vehicle. If, during this time, the lock components wear so little that they survive this span (and typically beyond), than it would be reasonable to say that from a wear perspective, one, two, three or even four insertions of the key (typical during testing) would have no identifiable effect on the contact surfaces of the lock of key.

"Accusing a forensic locksmith of evidence spoliation because a key was inserted in a lock is like accusing a medical examiner of spoliation because an incision was made during an autopsy."

Automotive System Bypass Indicators

While on the subject of vehicle locks, vehicles are stolen by one of two methods: driving or towing. In most cases, the latter does not require a key (although it does require a tow truck). With towing, little, if any, physical evidence directly attributable to the alleged thieves' method of vehicle removal may be recovered. However, it is generally accepted (and documented by interviews of captured car thieves) that a thief who is taking the greater risk (by using a tow truck) is expecting the greater reward (more money). Thus, the monetary gain realized by the thief is a great consideration when suggesting that the theft is executed by tow vehicle. If the stolen vehicle was driven, the thief must have bypassed the anti-theft/theft deterrent systems or had a "working" key.

Indicators of system bypass are often also revealed during post-recovery examination. If the thief had a key, then that key was made from a code or using a known key as a master. This "new" key will likely have a different shape or contour than the routinely used key and will often have burrs that may or may not have been removed following cutting. Assuming the "new" key is metal, the potential of marking the interior of the lock exists (albeit limited). However, due to difference in the character of the new key, any markings on the tumblers associated with that "new" key would be in a different location on the contact surfaces. Such markings are generally identifiable during otoscope/ophthalmoscope examination. If such markings are identified during otoscope/ophthalmoscope examination, the technician would normally elect not to insert the (provided) key unless other testing (that requires key insertion) is deemed essential.

Regardless, post-recovery insertion of a supplied working key will not strike the tumblers in the same fashion (and location) as the "new" key; therefore, it will not alter or otherwise obliterate markings

left by that "new" key. When one considers this and the limited number of times a thief may insert a key into the lock of a stolen vehicle, it can be concluded that potential for altering the interior of a lock by insertion of a known operational, previously used key is little to none, especially if the guidelines are followed.

Transponder Immobilizer Systems

With the development and implementation of sophisticated transponder immobilizer theft deterrent systems, the importance of the mechanical locking systems has diminished to the point that many vehicle manufacturers no longer include mechanical anti-theft/theft deterrent devices requiring a traditional key. More and more vehicle manufacturers have been doing away with the mechanical theft deterrent systems in favor of fully electronic security. One can conclude that the vehicle manufacturers no longer consider the mechanical theft deterrent systems the primary security device, leaving the transponder immobilizer system as the more important anti-theft system. However, to properly assess the transponder immobilizer system, a technician must operate the ignition and position the key in proper proximity to the antenna/inductor ring surrounding the entry to the lock cylinder.

The antenna/inductor ring serves two purposes. It emits, by nature of its inductive properties, an electromagnetic pulse used to power the transponder device in the key and receives the radio frequency signal emitted by the powered key. The antenna/inductor ring is the communication link between the key and the car, as the radio antenna is the link between the radio station and vehicle's radio. So, to power the key and receive the emitted signal, the key must be in proper proximity to the lock while the ignition is turned on. As such, testing of the system requires the key to be in the ignition. This is where a compromise must be reached. If the technician chooses not to insert the key, he or she may be accused of not performing the proper testing and is now subject to more substantive accusations that leave his or her opinions open to successful challenge.

"Destructive tests and the disassembly associated with them are generally not reversible and, as such, the evidence under scrutiny is forever changed."

Since testing has established that limited insertion of a known operational, worn-from-regular-use key does not alter the interior of the lock (with few exceptions), then choice to insert the key to test the "more important" theft deterrent system (transponder immobilizer) is an educated choice that will not, if guidelines are followed, constitute evidence spoliation. Thus, accusing a forensic locksmith of evidence spoliation because a key was inserted in a lock is like accusing a medical examiner of spoliation because an incision was made during an autopsy.

In conclusion, the insertion of a known operational, regular-use key into the ignition lock should not — if precautions are taken — alter the interior of the key or keyway. Therefore, such insertion should not constitute evidence spoliation. Based on the materials used in lock component construction and relative hardness of keys and locks, the effects of limited key insertions would not be identifiable. In fact, it may be argued that proper testing of what now has become the primary theft deterrent system (the transponder immobilizer) dictates key insertion as a necessary part of the process. However, investigators not trained in forensic lock and key analysis should consult a forensic locksmith if there is any possibility that the key to be inserted may alter the interior of the lock.

In the end, evidence spoliation is the decision of the judge — not the expert, not the advocates and not the lawyers. Scientific evidence, use of recognized protocol and guidelines and (unbiased) logic can assist the trier of fact (judge or jury) in making such a decision and protect the forensic locksmith from unfounded accusations of impropriety. More importantly, it can keep your hard work from being excluded from an investigation.

Jeff Lange, PE, CFL, a past president of the International Association of Investigative Locksmiths, is a Certified Forensic Locksmith and Licensed Professional Engineer. He can be reached for questions or comments at jeff.lange@langetech.net.

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Time for Some Brains

Greg Perry, CML, CPS, discusses assembling and wiring electronic access control system panels.

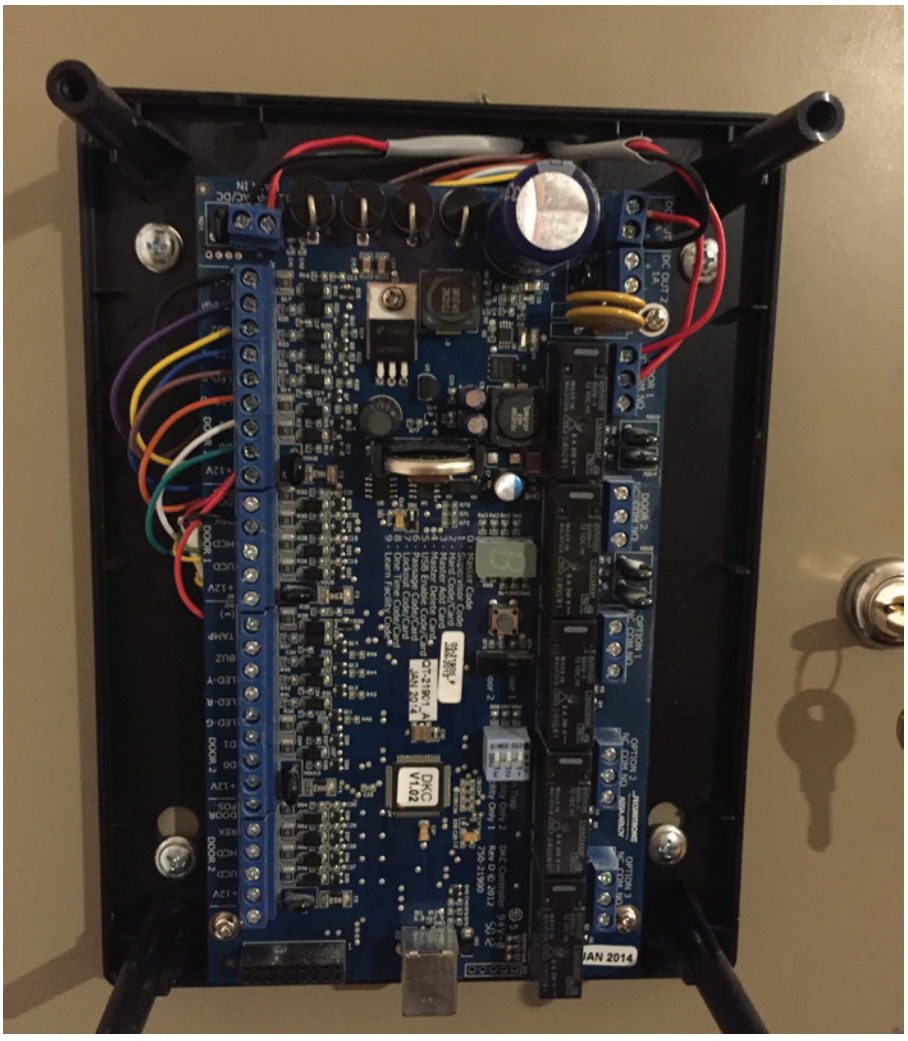

Figure 1. This Securitron DK-C panel requires an external power supply that can be 12 or 24 volts, AC or DC. The panel is mounted to the cover of the power supply cabinet. This was a replacement for an old control that failed. The power supply here is 24 volts DC. An advantage to DC is the ability to provide battery backup. The lock in this application is a maglock. Because maglocks require power to lock — meaning they are always on — they require DC and the need for battery backup. The wires are dressed in this application by placing them under the control board.

It's time to get back to the series I started a few years ago. First, I want to apologize. I started this series a few years ago and then had several changes in my life: new home, promotion at work, etc. All good, but I got a little sidetracked on this series; it's time to pick it back up to complete the series. I left off discussing panels, or the brains of the system (*Keynotes*, October 2014). The next step is assembling, wiring the control and programming. It should be noted here that all wiring should be completed before applying power to the unit. Also, unless the manufacturer tells you something different, anytime you are working on the control, you should be wearing a ground strap to minimize or eliminate the risk of static electricity damaging the control. The first connection you should make is the ground wire.

Some controllers are assembled at the factory on a single-circuit board or motherboard, similar to a laptop computer. Other times, they are assembled more like a tower computer where the individual parts are put together by the technician either at the factory or occasionally in the field. Just like your computer, they have a central processing unit (CPU) attached to a motherboard. Most of these are not replaceable, but some of them are removable to allow for upgrades. Some brands will offer separate cards or daughter boards for network connection, additional input or output boards or additional memory.

The different brands may have some variations in how they are assembled at the factory or in the field. Sometimes, it's a difference in the base unit and expansion. Most start with a basic motherboard that has all the components needed to operate built onto it, although some — such as the IEI MiniMax panel — have a back plane that the motherboard attaches or mounts onto. This allows for different

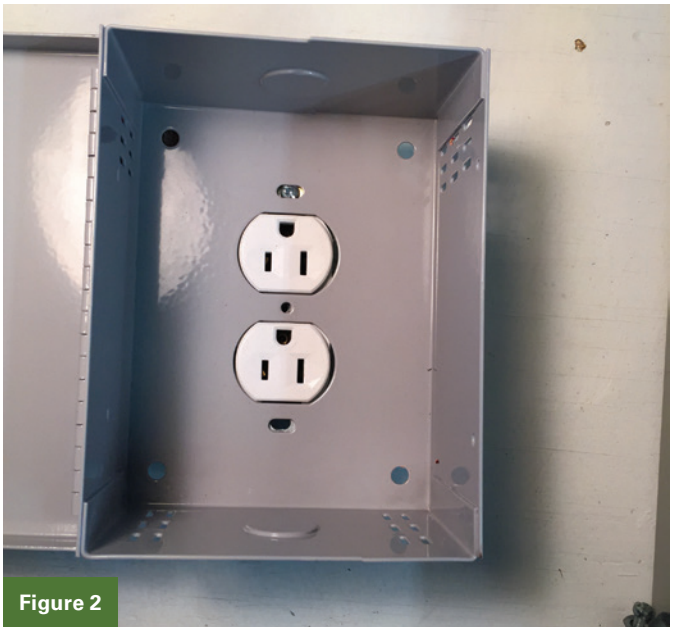

Figure 2

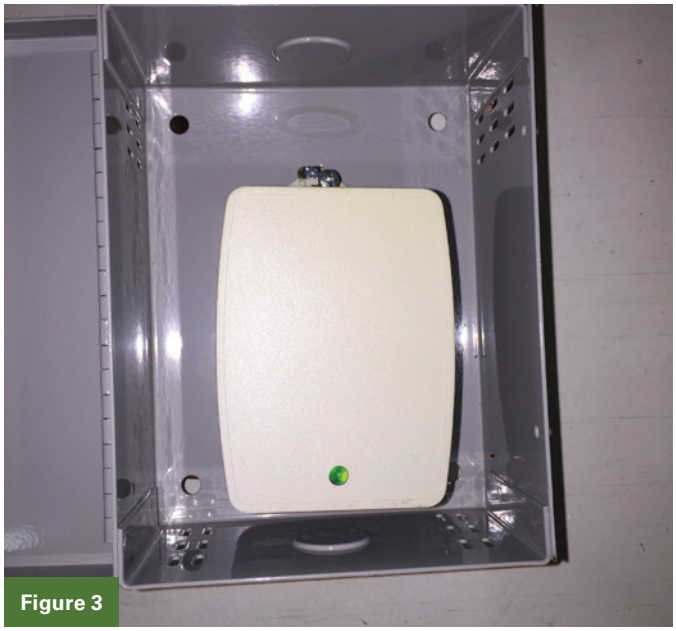

Figure 3

Figures 2 and 3. These photos show a cover for transformers. It does three things. First, it protects the transformer from being disconnected or unplugged. It also provides a way to add a tamper switch, and it provides a conduit knockout to allow the wire to be protected in conduit going to the control panel.

Figure 4. Radionics Readykey was purchased by Bosch a number of years ago. It's an older control panel that was produced by Stanley Pac, and they made two vintages in both two- and four-door models. The front keypad panel is used for initial programming, or it can be used to administer the system on the master or first controller in the system. Once the system is online with a computer or for all the additional panels on the system, the front panel is not needed.

Figure 5. The power supply for these controls is essentially a computer power supply that offers multiple output voltages. The power supply provides 5 volts, 18 volts, lock power and battery power all from the same unit. The ribbon cable from the front panel plugs into the top of the motherboard. There is a coin cell battery to maintain programming when the AC power and backup power is removed.

Figure 6. All the wires are nicely dressed with square corners and tie wraps to keep everything in place. The terminals are labeled a little different from some panels. The GND is common or negative. The SIG1 is for reader communications when using their readers. DR1 is for the door position sensor or contact. DR2 is the REX input. LED is the light on the reader. +18V is the reader power. DR3 and DR4 are for use with an alarm system. This control supplies lock power instead of a "dry" or no-power relay switch labeled C or common, NO (normally open) and NC (normally closed). The switching for fail safe and fail secure locks is done with programming. RDR1 and RDR2 are for use without readers. The door contact and REX share the GND terminal with separate wires from the door.

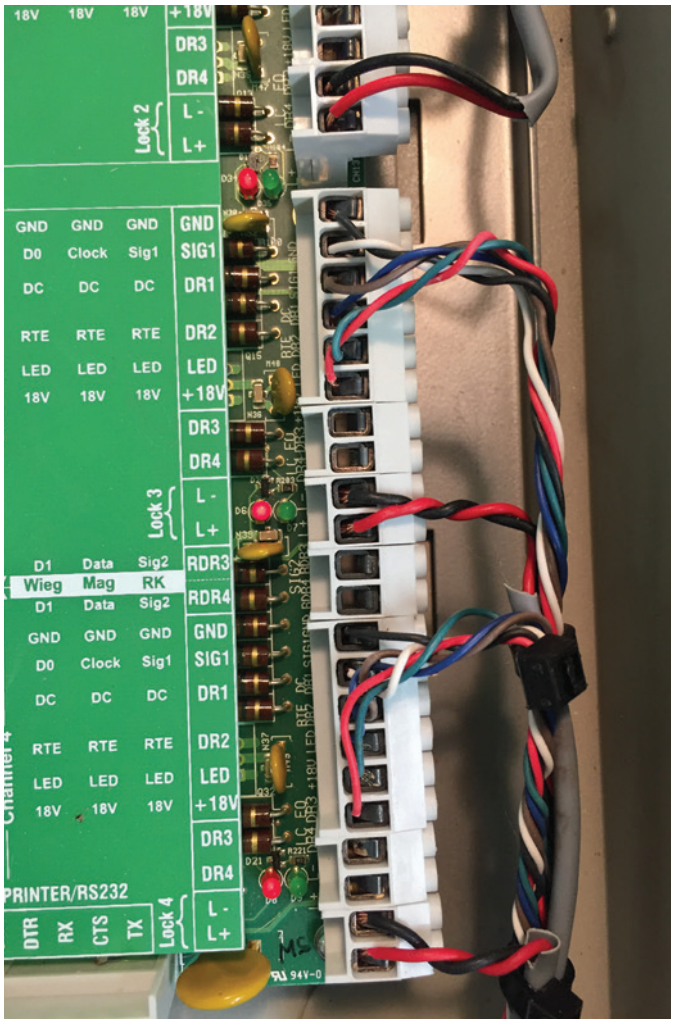

Figure 7. This panel has two styles of dressing the wires on the right side. The upper two sets of reader and lock wires seen in *Figure 6* are stripped back short, leaving the outer jacket close with only a short amount of inner wires exposed. The lower two sets of wires are stripped back quite a bit farther and then twisted back together with a cordless drill. The lower pair used a six-conductor wire and shared the negative wire at the door end. Both work; the choice is yours as an installer to decide which you like better.

motherboards to be installed in the field to minimize inventory, and it also allows for the installer to upgrade later without having to replace the metal enclosure.

Power Supply

Some panels will require 120-volt power supplied to the enclosure. Most who want the 120-voltage wired to the panel will want it hardwired with conduit by an electrician, although at least one brand I've seen uses a computer-like power supply with a common three-wire power cable that looks like an extension cord. Others may want 12 to 24 volts AC or DC from an independent low-voltage Class 2 power supply. In all cases, the power source should be protected from being easily unplugged with a cover over the transformer if it uses a plug-in transformer, and the cable between the power supply and the control should be in conduit.

If the controller uses 120-volt AC power, then your electrician will need to pay attention to wiring the hot, neutral and ground to the correct terminals or wire pigtail in the power supply. There normally will be a separate compartment inside the enclosure for this wiring. If it is low-voltage AC from a transformer, then the wires are not labeled hot and neutral — meaning they are not polarity sensitive. If it is low-voltage DC, then

Figure 8. This is an example of why you need to recheck all wiring prior to applying power. I intentionally left a strand loose for the photo, but I have had this happen to me on the job.

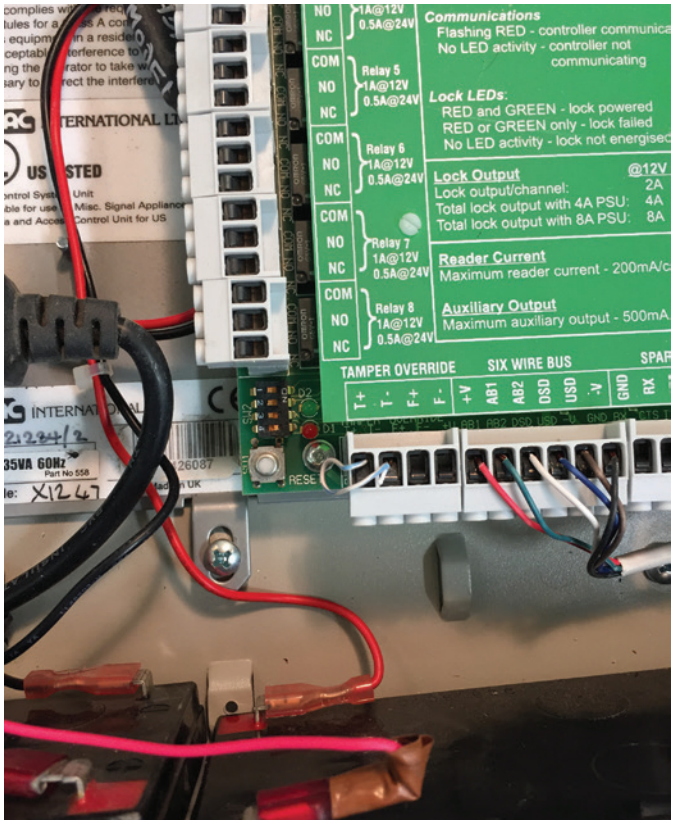

Figure 9. This panel uses dip switches to set if the control is the master or a slave unit. This panel was wired with a jumper on the tamper terminals. Normally, the panel should have a tamper switch installed, but this customer didn't want or require it. I also question how to maintain the minimum separation between the incoming 120-volt power and the low-voltage with the power cord, so close the control board.

the positive red and negative black or + and – will be identified on the control board. In all cases, the manufacturer of the panel will dictate in the instructions where the wires need to enter the enclosure and where they are allowed to be placed. This is especially true any time you are dealing with the 120-volt wiring.

The National Electric Code (NEC) dictates at least a 2" separation between the wires in the controller, and the panel must be designed by the manufacturer for 120 volts. It cannot be used as a pass-through for 120-volt wiring unless allowed by the manufacturer. I should state that these rules probably apply to higher or different voltages that might be used in other countries.

Input Device

The next piece to wire is from the input device: the keypad, card reader or biometric reader. It will have at minimum four wires: power is red for positive, black for negative, then typically green, Data 0 (D0) and white Data 1 (D1). It may also have wires for an LED and/or a sounder. Some may have two LEDs, and it is up to you to decide which color LED to use. Some devices may require a shield around the cable. If it does, the shield or drain wire will need to be connected to the panel at the appropriate terminal on the panel. Drain or shield wiring is only to be connected to ground at the panel. The reader may have a terminal or wire for connecting the drain wire, but don't connect it to an earth ground or metal conduit at the reader end.

Most panels will require — or at least should require — door position switches and Request to Exit (REX) inputs. After all, what good is an access control system if the door can be left open without the control notifying someone? Identiv, formerly Hirsch, uses a module that's installed at the door to collect the door contact and REX wires. They call it a MELM, or miniature embedded line module. It, in turn, is wired to the control panel. The door switch is usually a magnetic contact that will be labeled "closed loop." This means that when the magnet is next to it, the contact is closed. Most controls also require an end of line (EOL) resistor at

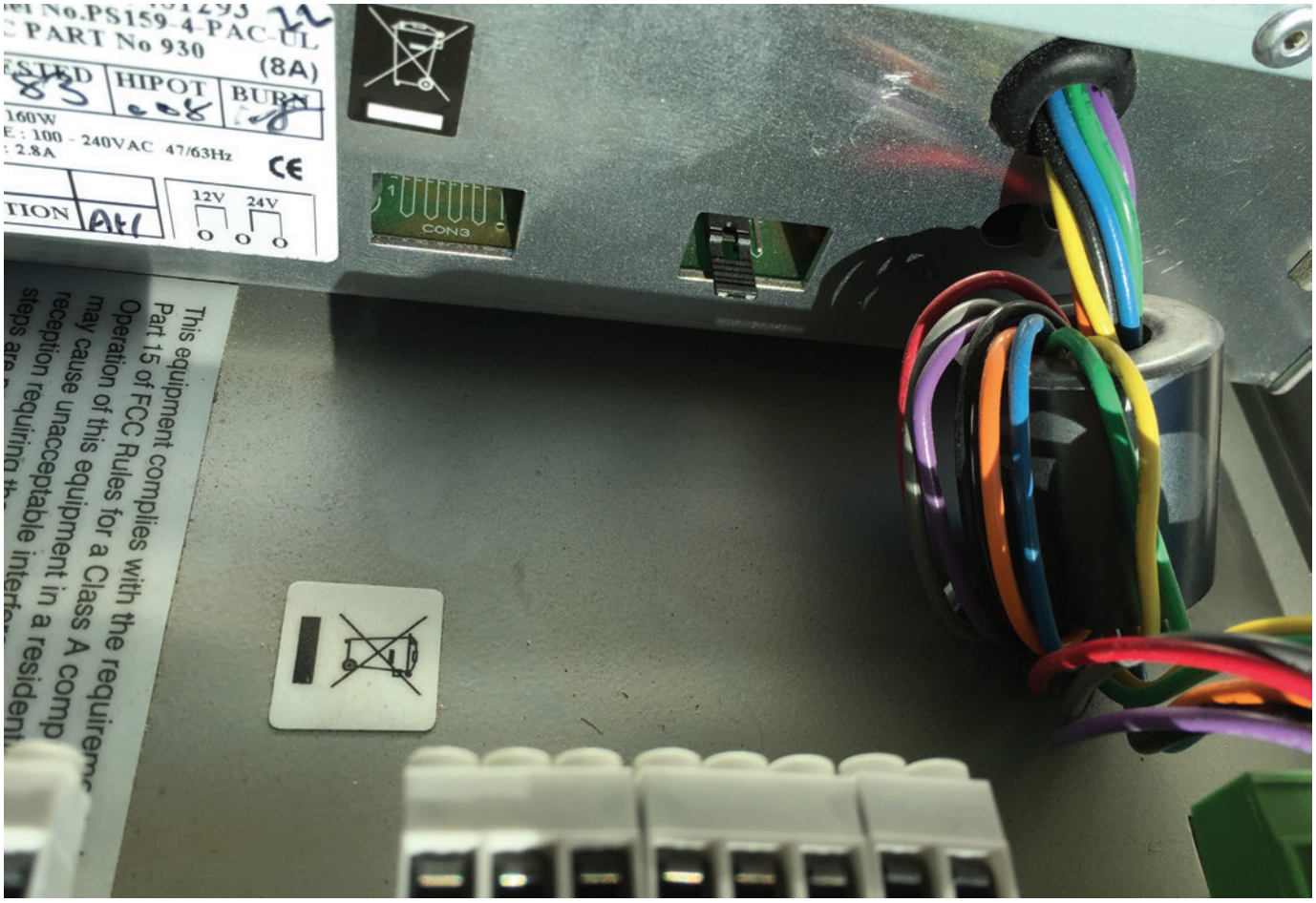

Figure 10. This jumper sets the lock output for 12 or 24 volts DC.

the contact. This creates a voltage drop on the line that the control can measure. An example might be when the system requires a 1000-ohm resistor at the end of the line or the contact, the panel will place a 5-volt supervisory voltage on the terminals or wires. If the panel registers 1.7 volts, it is normal. If wires don't have anything connected at the end, the panel will measure 5 volts. If the terminals or wires are shorted, then it will register 0 volts. In operation, this means the panel will see normal state; the door is closed. When the door is open, the door contact switch will also open changing the voltage to 5 volts, indicating to the panel the door is open.

During operation, the panel needs to know if someone is exiting. This is the job of the REX; it will let the panel know someone is going out. The switch can be built into the door lock, or it may be a separate motion sensor mounted above the door. If the door lock is a maglock or electrified deadbolt, then the panel needs to unlock the lock to allow egress. If the lock allows free egress, then it shouldn't be programmed to unlock the lock, but it still needs the REX to know someone is going out. Otherwise, how will it know the difference between someone using a key — or, worse, forcing the door open — and someone exiting the door? It can also monitor for the door being left open too long. This can be programmed to sound an alarm, or some panels can be programmed to send an email.

Lock Connection

The next connection needs to be the lock. Most panels simply offer a Form "C" relay with common, normally open and normally closed terminals or dry contact connection for the lock. This means it is an on/off switch not supplying voltage to power the lock. You might be able to use the same power source as the panel, or the lock might require a bigger power supply or different voltage than the panel. In some cases, the panel may have terminals for lock voltage. These may be powered all the time and still need to be wired through the output relay, or the panel may switch the power for you. Other brands may supply switched power for the lock, and settings in the software

Figure 11. An earlier version used a switch to set the lock voltage.

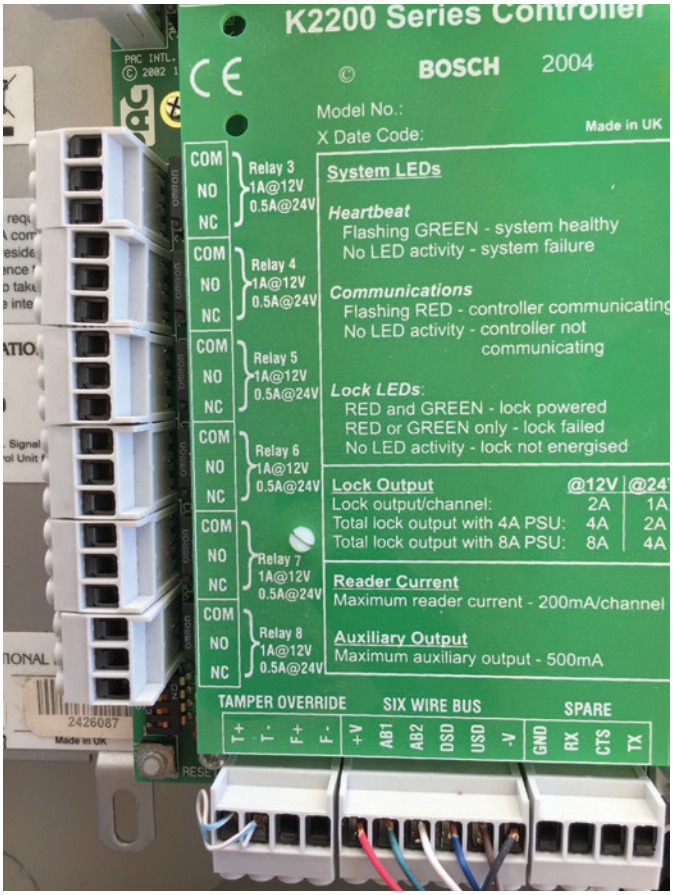

Figure 12. This panel offers several output relays for controlling other things such as lights, HVAC or anything else you might want turned on or off using the access control panel.

will be used to switch between fail safe (power to lock) and fail secure (power to unlock) locks.

Network Connection

The last connection for many systems is the network or computer connection. It may be RS485 or TCP/IP-based or some other communications protocol. Some will wire direct to the panel. Others will use a communications module, and some manufacturers may provide a plug-in jack for a standard 8-pin CAT5/6 computer cable.

Once you have all the wires connected, determine if all the jumpers or dip switch settings are correct (if the panel uses jumpers or dip switches). The jumpers or dip switches may exist for setting input voltage or the panel address. Next, ensure all the wires are in the correct locations, secure and properly installed with no issues prior to applying power. Then check the instructions to see if DC or AC power should be applied first. In many cases, it might be your choice, but some panels won't energize or power up until the AC power is applied.

Finally, it's time to power up the panel. During power-up, most panels will do a POST (power on self-test); during this time, the panel is checking for any issues. Hopefully, everything works properly, and you can move to the next step: programming.

In the next installment, we'll look at programming what is commonly required to make the system respond the way the customer needs. This usually includes IP or panel address, date/time, schedules, credentials, outputs and more.

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

1

Loveliness Locked Up in the Lobby

A beautifully refinished Diebold on display cracks under (added) pressure.
By Tom Gillespie, CML, CIL, CCL

Starfleet Lock & Safe, Inc. is located in Springfield, Illinois, the state capital. This midwestern city of about 110,000 is located about 200 miles south of Chicago and 100 miles north of St. Louis, Missouri.

In the ancient past, I ran a large lockshop in Orange County, California. From 1974 through 1990, Newport Beach was my home base and we serviced mostly southern Orange County and a fair amount of the 20 surrounding cities. As the population of the surrounding area grew (in 1975 it was 1.4 million; in 2015, it was 3.1 million), so did the business. By the late '80s, we were running the large majority of our service calls in an increasingly smaller geographic area. More business and fewer average miles per call meant an increase in profit.


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Now, back in my home city — where I started this profession in 1969 — the process is reversed. The shop in Orange County had at least 50 other local locksmith companies against which to compete. Springfield has only three, and one is part time. Thirty miles away, another long-established locksmith has retired and can find no buyers for the business. For the next 70 miles in that direction to the state border there are no locksmith companies.

Because of this, we service a wide geographic area, including multiple referrals from the retired locksmith. We focus on commercial accounts, local and federal government work, property management companies and safe-related work. We do a lot of bank safe deposit and vault work throughout the Central and Southern Illinois region. In most of these areas, locksmith competitors and colleagues are few and far between. One locksmith in the region specializes in automotive work while we do almost none — the exception being a large auto dealer with multiple locations that brings new door and ignition locks to our bench to set to a customer key.

A few years ago in the lobby of a small-town, family-owned bank, I noticed a nicely refinished old Diebold safe when I went to do a small master-key job. After admiring it during one visit, I heard that it was locked up and the combination wouldn't work. Starfleet owner Gene Gyure got involved, and the job was scheduled.

As always, Gene made notes and took measurements during his initial evaluation of the unit. Prior to any opening, he spends time checking his printed and electronic reference material. The more he researched, the more familiar the lock seemed. In fact, he was sure he had a lock just like that somewhere in his collection of parts. He eventually found the exact same lock in the warehouse, attached to the exact same safe! He had the whole thing.

Here is what happened to the old safe that was locked up in the lobby:

1. Glossy Finish

Apparently, the old Diebold Heavy/Thick Wall box had been in the bank's possession for some time. A number of years ago when the new bank was built, it was decided to have this unit "refinished" as a lobby display piece. A local auto body and paint client provided the refinishing. The safe dial was removed, the handle was taped off and the body was sanded and painted. Because it was not sand-blasted, some uneven areas were still visible upon close examination. Minor blemishes not withstanding, it had a high-gloss automotive finish that appeared black at first glance but was actually a deep forest green with a hint of metallic reflection. This was a beautiful safe.

2. Added Line Art

The reflective condition of the paint was enhanced by the addition of "pin striping" or, in this case, stripes, decorative designs and lettering in applied in a gold-toned vinyl tape. After everything was laid out and applied, a clear coat was sprayed on the entire safe. From a design standpoint, the Diebold safe had a unique radius at the door corners. Personally, I would have probably mirrored that door-edge radius in the corner line art design.

3. Gold Leaf

Another eye-catching feature of this refurbished safe was the lettering. The bank's name and date of incorporation (1877) were proudly displayed in gold leaf characters outlined in a bright red trim.


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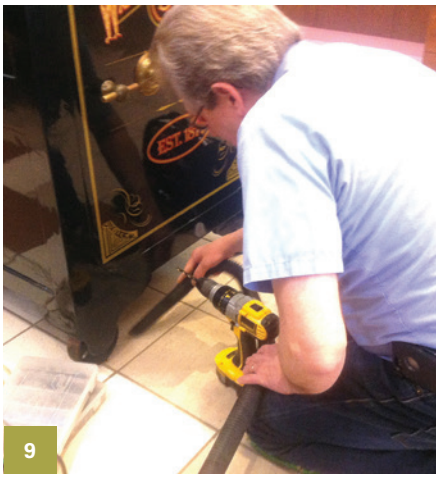
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4. Dial and Ring

The old Diebold had the original T-handle, 100-number dial and unique dial ring. The dial ring was marked with "Left" and "Right" in a vintage serif script so the user can tell which way the dial is being rotated. (How else would you know?) The index "arrow" was just that: an arrow with a nice sharp pointed tip, and even some "feathers" on the top of the shaft so you know it's an arrow. Also visible in the dial center cap was the manufacturer name and patent date of May 23, 1871.

5.Combination(s) Tried

The bank staff had some numbers they thought might have been "all or part of the combination" at some point in time. Gene dutifully tried a number of combinations and variables to no avail.

6. Clipboard Consult

Gene is not looking at a blank page in this photo; he is looking at a (masked) page of instructions from The National Safeman with accompanying photos illustrating the Diebold Heavy/Thick Wall safe. This publication is but one of many helpful points of reference he gathers before any safe opening. He also had notes and measurements from his identical personal Diebold, which is in our warehouse waiting to be refurbished in his "spare time."

7. Drill Prep

After the various combination attempts failed, it was time to prepare for drilling. Out came the essential tools, including a worn kneeling mat and a bag of hand tools and drill bits, as well as a small vacuum cleaner.

8. Outer Surface Drill

Gene center-punched the lower left quadrant of the dial ring and penetrated the ring and outer steel surface. Although the recommendation was to drill just outside the ring, he elected to go through the ring at a shallower angle to avoid having to match the paint after repairing the door surface.

9. Cleanup

As always, Gene was fastidious about providing a professional service to the customer. He vacuumed the drill shavings from the ceramic tile floor as soon as he finished drilling. In addition to keeping the area clean, he didn't have to worry about putting his hand or knee down on metal shavings.

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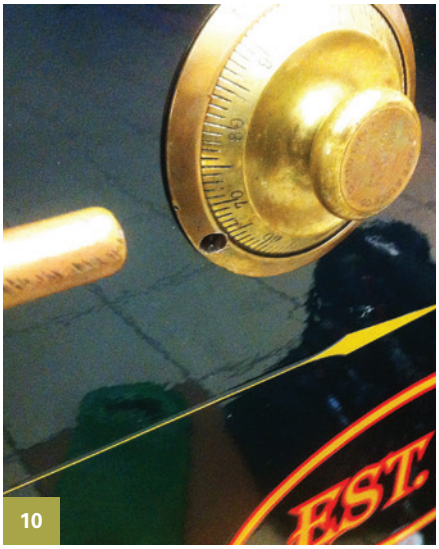

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10. Drill Point

After the initial hole was made, it was apparent that the ring was the only repair we had to worry about during repair and reassembly. As it turned out, we didn't even have to fill, plug or weld the drilled hole, since this old girl was simply used as a conversation and display piece.

11. No View

A quick look provided an excellent view of — nothing. As it turned out, he wasn't deep enough into the door yet. Because of the slippery tile floor, it was difficult to get enough pressure to penetrate the hardplate.

12. More Pressure

Needing a little more pressure, Gene pulled out the reliable StrongArm lever rig. This unit had seen a lot of use; it is the first line of defense when you want to increase your drilling ability by using leverage.

13. Chain Rig

Hooked up and ready to go, the drill powered through the hardplate to gain access to the wheel pack. Another quick cleanup of the shavings, and we were almost in.

14. Another Look

The Storz 70-degree scope was used to get a good look at the wheel pack and run the gates to line them up. After transposing the numbers and making a slight recalculation on the second wheel position, we were ready to discover the secrets inside.

15. Open Safe

As always, the customer got to turn the handle and pull the door open. The bank's president did the honors.

16. Penetration Point

With the bolt and fence assembly removed, the penetration point was revealed. The method of going through the dial ring provided an excellent view of the wheels and allowed a repair that


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didn't require any repainting of the door to cover our entry point.

17. Another Chance

We were surprised to find an inner door, also without a known combination. The dial felt very stiff and uncooperative so Gene just decided to skip trying the combinations that didn't work on the outer door.

18. Inner Door Drill

Again he chucked up a StrongArm bit and drilled into the door. Again he slipped a little on the tile floor trying to apply pressure.

19. More Chain

To save time, Gene went ahead and attached the chain to the inner door flat handle. The look on his face in the photo indicates his surprise when he pulled on it to make sure it was securely attached and the door pulled open! The multiple layers of paint had made the door stick in the fully closed position, appearing to be locked.

20. Layers Unwrapped

After it was opened, it was evident that this safe got locked up shortly after it was repainted. The paper and masking tape still protected the inside boltwork and mechanism. The owner looked on as the layers came off.

21. Inside Boltwork

Strange, we didn't see any drywall or wimpy bolt carrier parts. The majority of safes built today don't have outer doors that would compare to the inner door on this safe. The removal of the paper revealed what many safe technicians love about vintage safes. The massive mechanism had obviously been designed to provide superior protection of the contents.

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22. Inside Detail

The level of detail on the units from the late 1800s is nothing short of inspiring. Not designed to be seen by anyone except the safe owner, the bolt connecting plate and framework proudly trumpets the manufacturers name and city of construction. Additionally, decorative circular designs are there simply as an expression of the pride the technicians took in their work.

23. Message From the Past

Although all the inner wooden cabinetry had been discarded at some point, we did find a cryptic message in chalk on the sidewall. Probably nothing more than a production note when it was built, the chalk message had held up well for almost 140 years. Notice the white paper laying on the safe floor in the photo?

24. Surprise Package

The surprise package contained the boltwork/fence and wheels for the interior door. No wonder Super Gene was able to simply yank the door open — it was never locked.

25. Dial Difference

The outer dial (left) and the inner dial had a slight difference. The inner dial had a tapered collar added to the dial base. In addition, the inner dial spindle was about a ½-inch longer. On both dials, the smooth portion of the spindle was the same length between the dial base and threaded segment.

26. Inside Dial and Ring

The inside dial and ring were in poor shape cosmetically. The drilled hole was repaired and both parts were polished before reassembly.

27. ClearStar Assist

Since the outside ring was the one that would be primarily on display, Gene preferred installing an undamaged ring instead of repairing the drilled original. After we posted a request on


28

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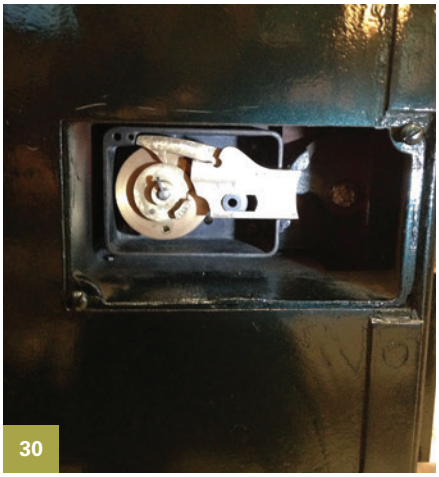
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32

the ClearStar Network, a replacement was on the way. We received it and sent all the parts to the metal-refinishing wizard we are fortunate to have at our disposal.

28. Inside Lock Install

After replacing the working parts, Gene used a homemade change key to reset the combination on the inside lock. Not having the correct key on hand, he fashioned a square-shafted tool out of an S&G change key, but found it bent under turning pressure. Not to be denied, he reworked an old stainless steel dental tool until it worked just right.

29. Outside Parts Install

In the time between the original opening and the reassembly, the safe door was left in an open state with the bolts extended to prevent accidental locking. Since the upper bolt had dropped inside the door cavity, replacing the T-handle required manipulating the bolt-carrier assembly until everything lined up.

30. Outside Mechanism Alignment

The lock body, wheel pack and fence/bolt parts all were replaced and lubricated with AeroShell grease until they worked smoothly. All components had been completely disassembled, cleaned and checked before reassembly began.

31. Dial Ring and Handle Placement

With the handle in place, the dial ring was next. The newly acquired ring had been polished to a brilliant shine and looked great against the glossy paint.

32. Wheels and Bolt Install

As with any reinstallation, a few minor adjustments were made as the parts went together — tighten, try it, loosen, realign and retighten, etc. — until it was just right.

33

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33. Impressive Piece

With everything in place, the safe had a great look to it. The highly reflective dark-green lacquer, accented by the red-trimmed gold leaf lettering and set off by the brightly polished handle, dial and ring made a truly impressive lobby display piece.

34. Operation Verified

Gene tried the newly set combination to verify proper operation. After multiple tries, he was confident it was ready for the customer.

35. Customer Attempt

After a little practice, the bank's president easily opened it a few times. He got the hang of dialing this old safe open on the first try and made note of the fact that it felt completely different from the newer safes in use at the bank.

36. One Happy Customer

The happy customer posed for a photo with his pride and joy. After many years between the original refinish job and getting the safe fully operational, he was quite pleased to be standing by the finished project.

37. Job Well Done

At the bank president's urging, Gene and I posed for a photo for his scrapbook. This customer called us to do this work because of other work we've done for him. Simple lock repair jobs, decoding their masterkey system, fitting keys for files and desks and safe deposit work gave him confidence in our ability to tackle this special project. Always keep the customer satisfied.

Tom Gillespie, CML, CIL, CCL, is a 49-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.

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The 2018 ALOA Locksmith Pricing Survey

Our members help provide an analytical look at our industry's pricing practices.

By Wendy Angel

If you've ever wondered how your company's pricing and demographics compares to those of others in the industry, we have answers for you. The fourth ever ALOA Pricing Survey polled ALOA SPAI members for pricing and hours information — as well as other details — including average pricing for a wide variety of services ranging from copying keys to moving heavy safes, and from installing locks to rekeying cars.

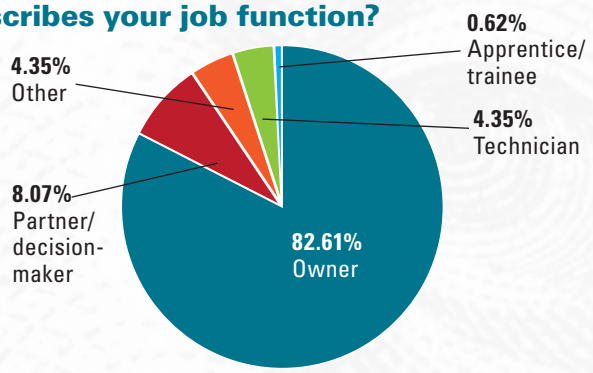
Note that every respondent's individual answers have been and will be kept strictly confidential. In other words, no ALOA SPAI member has access to the information submitted by another member. Also, do not use these results in setting present or future prices. The data presented on the following pages is for informational purposes only.

METHODOLOGY

- An email with an embedded link to an online survey was delivered to ALOA SPAI members. A survey response form was printed in the February 2018 issue of *Keynotes*.
- The survey had a response rate of 3.8%.
- The results of the survey are accurate at a 95% confidence level with a +/– .58% error tolerance.
- The results of this survey were confidentially compiled by *Keynotes* publisher madison/miles media, not by a locksmith or security professional.
- All survey questions refer to what ALOA members have charged in the past.

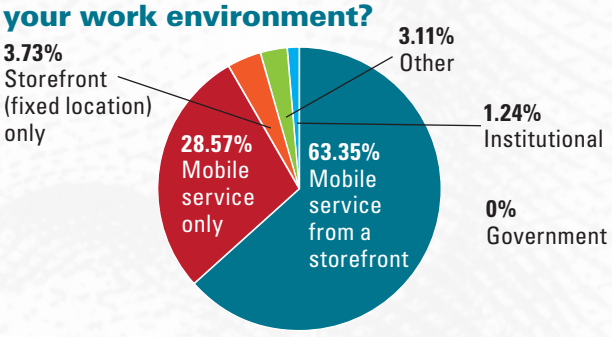
DEMOGRAPHICS

Which of the following best describes your job function?



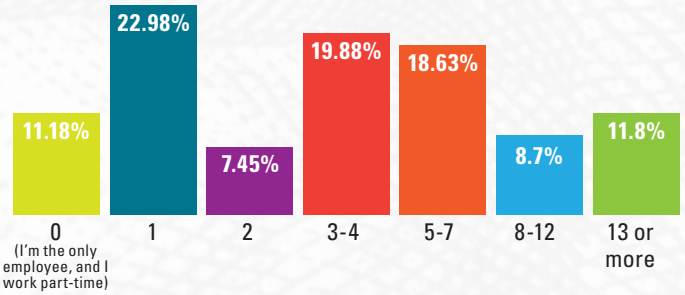
Nearly 83% of survey respondents were either a business owner or partner/decision maker, giving an indication that the survey results are coming from those most knowledgeable about pricing.

Which of the following best describes your work environment?



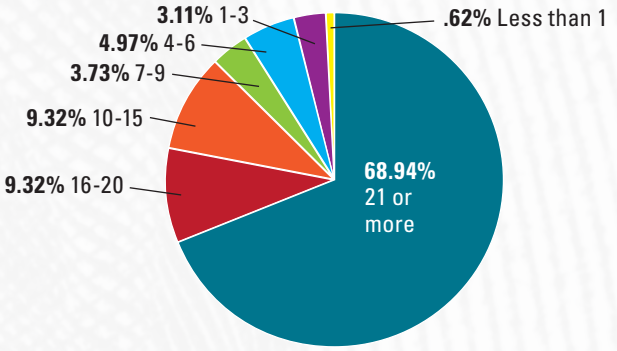
Since the last time this survey was conducted in 2015, the percentage of professionals offering only mobile service decreased by more than 7 percentage points, from 35.75% to 28.57%. Conversely, those offering mobile services from a storefront went up from 51.96% to 63.35%. Security professionals are trending toward having storefronts in their operations.

How many full-time employees (including you) does your organization have?



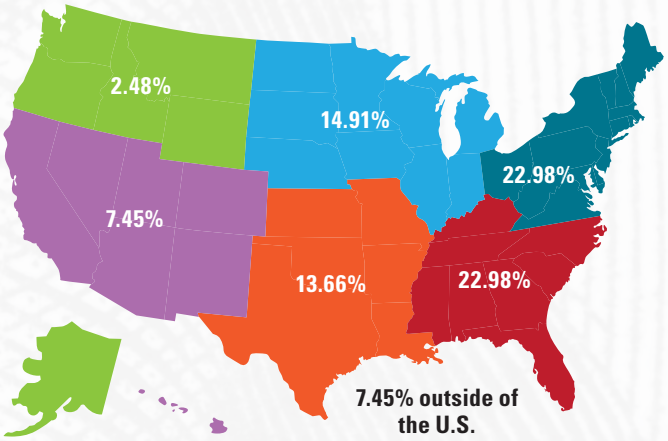
Similar to the 2015 survey, the largest portion of professionals (34%) work as the only employee in either a part- or full-time capacity. But, the percentage of those with three or more employees has grown to 58%, up from 50%.

How many years have you been in business?



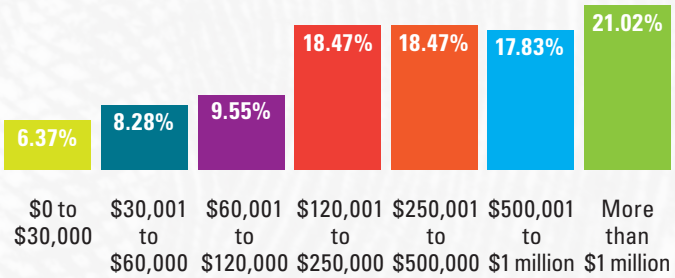
The majority of locksmiths (78.26%) have been in business for more than 15 years.

Where is your business located?



The Northeast and Southeast regions are tied for having the most locksmiths and security professionals than any other area of the country, outpacing the next-highest region (North Central) by 8 percentage points. The Southeast region has seen growth since the last survey in 2015, up 6 percentage points to nearly 23%.

Please indicate the annual gross revenue of your organization. (If you are primarily an institutional locksmith, select your department's annual operating budget.)



Locksmith businesses seem to be earning more money. Businesses earning more than $120,000 per year have increased to 75.79%, up from 65.81% in 2015.

What are your business hours?

Monday - Friday Opening Time	
6-6:30 a.m.	2%
7-7:30 a.m.	6.7
8-8:59 a.m.	63.75%
9-9:59 a.m.	18.8%
10-10:59 a.m.	4.7%
24 Hours	3.35%

Monday - Friday Closing Time	
4-4:59 p.m.	7.59%
5 p.m.	59.31
5:30 p.m.	8.27%
6-6:59 p.m.	12.41%
7-7:59 p.m.	2.07%
8-8:59 p.m.	2.75%
9 p.m. or Later	8.27%

Saturday Opening Time	
24 Hours	4.73%
7-7:59 a.m.	3.37%
8-8:59 a.m.	6.75%
9-9:59 a.m.	11.48%
10-10:59 a.m.	8.78%
11 a.m. or later	.68%
No Answer/Closed	64.19%

Saturday Closing Time	
24 Hours	4.73%
12:30 p.m. or Earlier	3.42%
1-1:59 p.m.	4.1%
2-2:59 p.m.	8.9%
3-3:59 p.m.	2.74%
4-4:59 p.m.	3.42%
5-5:59 p.m.	2.74%
6-6:59 p.m.	1.37%
7 p.m. or Later	4.79%
No Answer/Closed	64.19%

Sunday Opening Time	
24 Hours	5.48%
7-7:59 a.m.	2.05%
8-8:59 a.m.	3.42%
10 a.m. or Later	2.05%
No Answer/Closed	87%

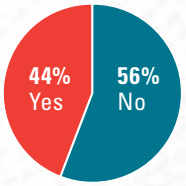
Sunday Closing Time	
24 Hours	5.48%
4 p.m. or Earlier	1.37%
5 p.m.	1.37%
6 p.m.	0.68%
7 p.m.	1.37%
8 p.m.	0.68%
9 p.m. or Later	2.05%
No Answer/Closed	87%

Holiday Opening Time	
24 Hours	5.48%
7 a.m.	1.37%
8 a.m.	4.1%
10 a.m.	0.68%
Noon	1.37%
1 p.m.	0.68%
No Answer/Closed	86.32%

Holiday Closing Time	
24 Hours	5.48%
4 p.m.	0.68%
5 p.m.	4.1%
6 p.m.	0.68%
7 p.m.	1.37%
8 p.m. or Later	2.05%
No Answer/Closed	86.32%

The majority of locksmiths work Monday through Friday, with the most common opening time being 8 a.m. and the most common closing time being 5 p.m. For those with businesses that are open on Saturdays, the most common opening time is 9 a.m. Only about 13% of locksmiths have regular Sunday hours.

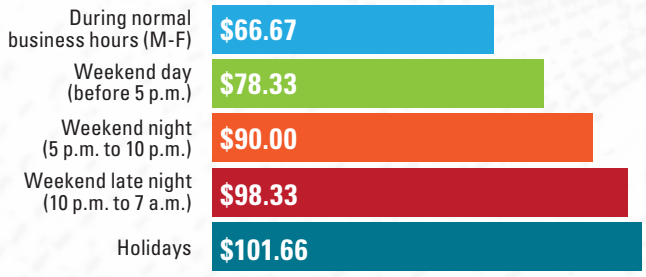
Do you offer true 24-hour service?



In previous surveys, locksmiths were evenly divided on whether to offer 24-hour service, but locksmiths are now trending toward not offering it.

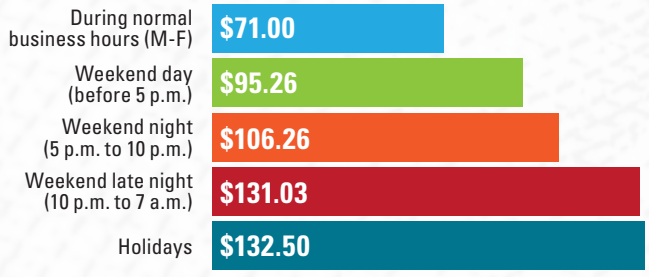
PRICING

In 2017, what was your charge for a residential service call at the following times?



Since the last survey, pricing for residential service calls on weekdays went up nearly $7. Holiday service calls went up by about $5.

In 2017, what was your service charge for a commercial service call at the following times?



Commercial service calls ranged from $71 on the low end for calls made during normal business hours — up from $64 in 2015 — to $132.50 on the high end for calls made on holidays.

In 2017, what was your hourly rate for the following types of work?

As in previous years, commercial service had the highest rate, which went up about $9. Automotive service has gone up $9 as well, and residential went up $11.

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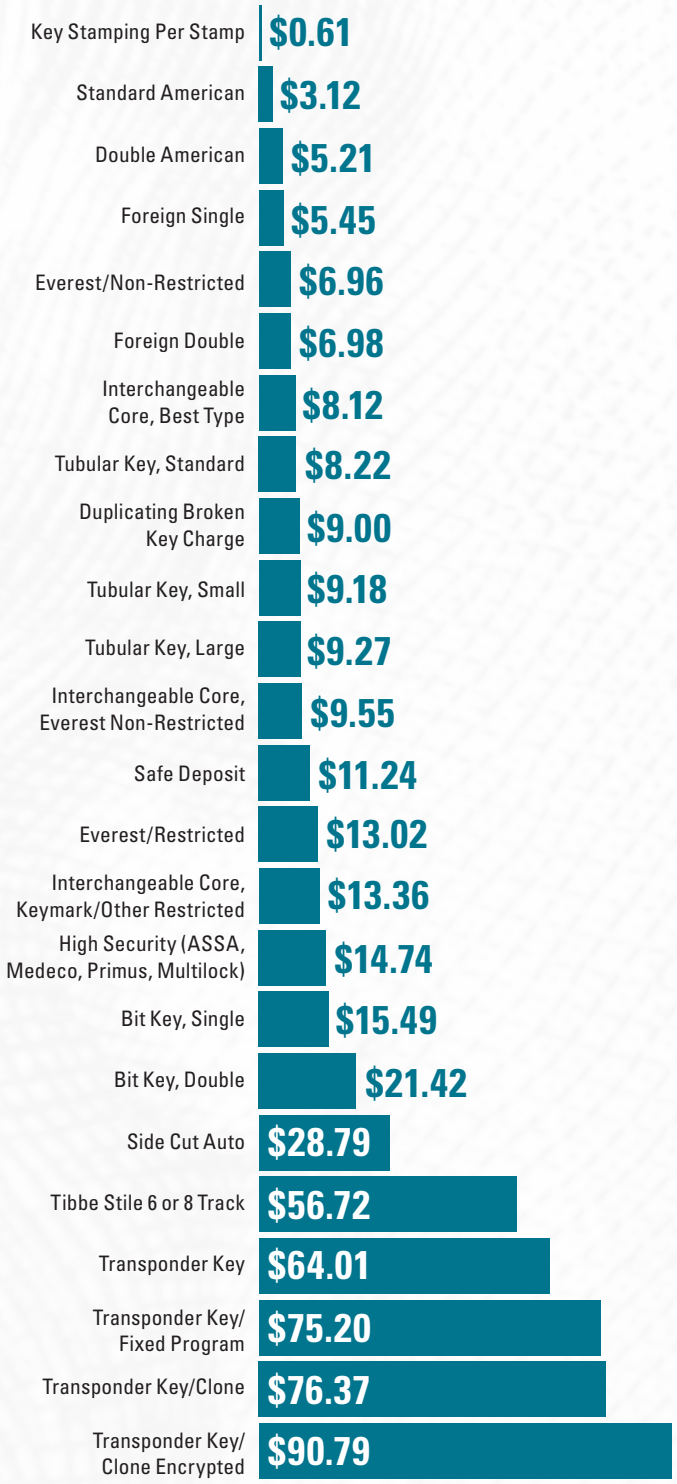
Classes: July 8-12, 2018

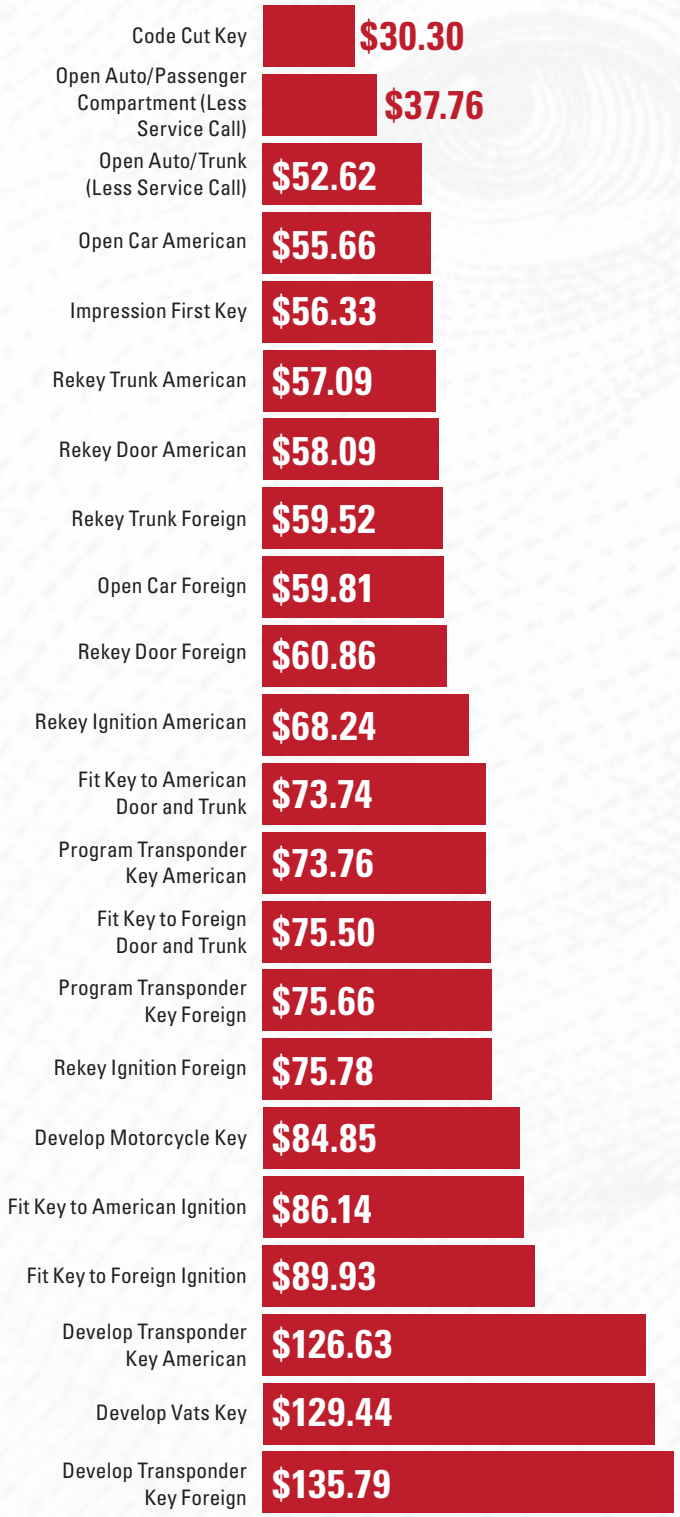
Tradeshow: July 13-14, 2018

In 2017, what was your rate for the following types of key duplicating?



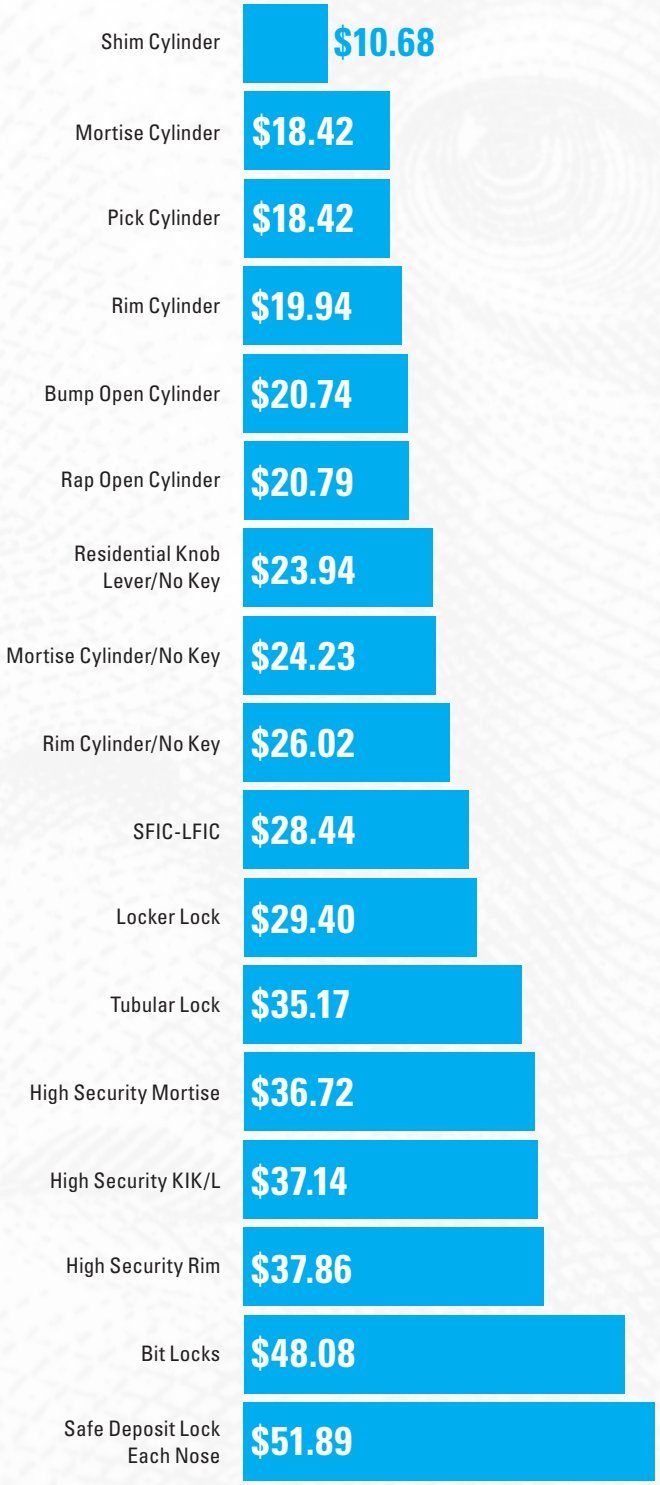
As has been the case in previous years, work involving transponder keys generated the highest rates, and Transponder Key/Clone Encrypted rates went up $22.

In 2017, what was your rate for the following types of automotive work?



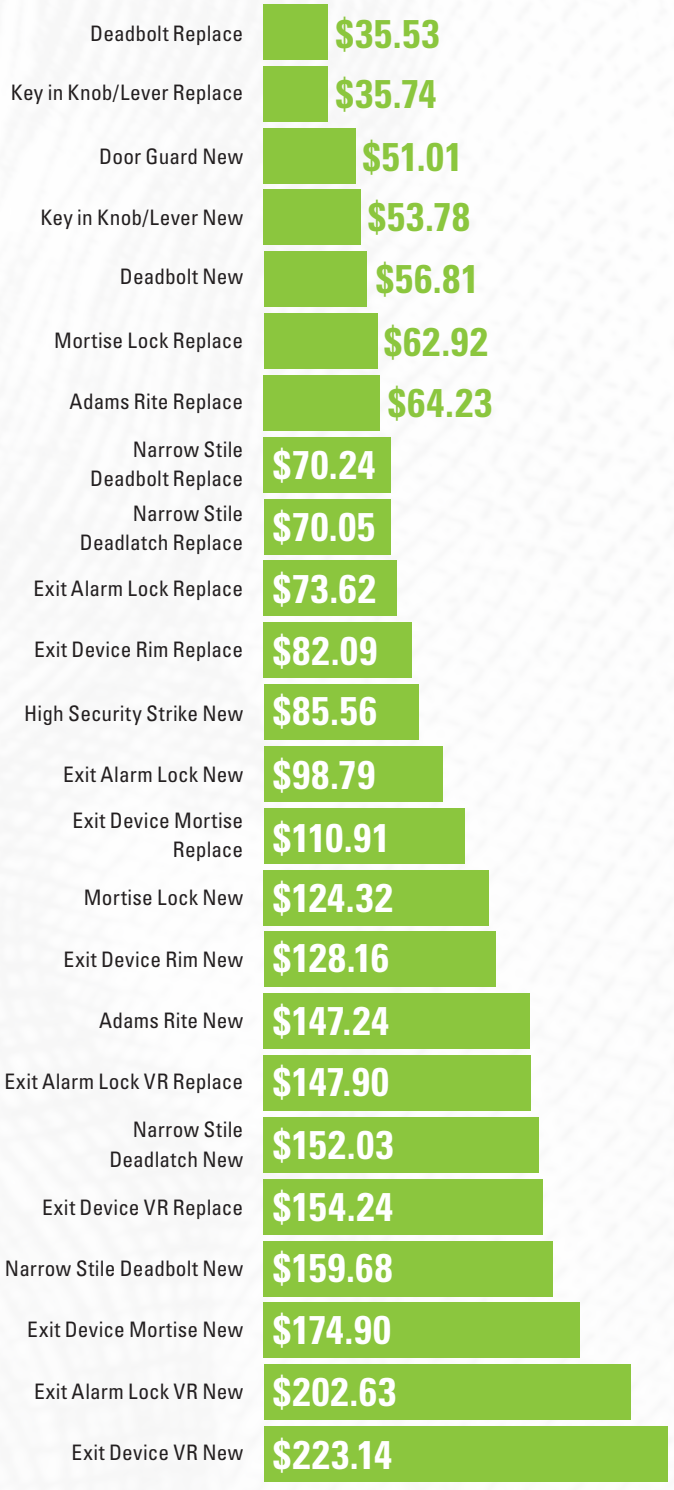
Developing vats and transponder keys was by far the most lucrative of the automobile work reported.

In 2017, what was your rate for the following types of rekeying services?



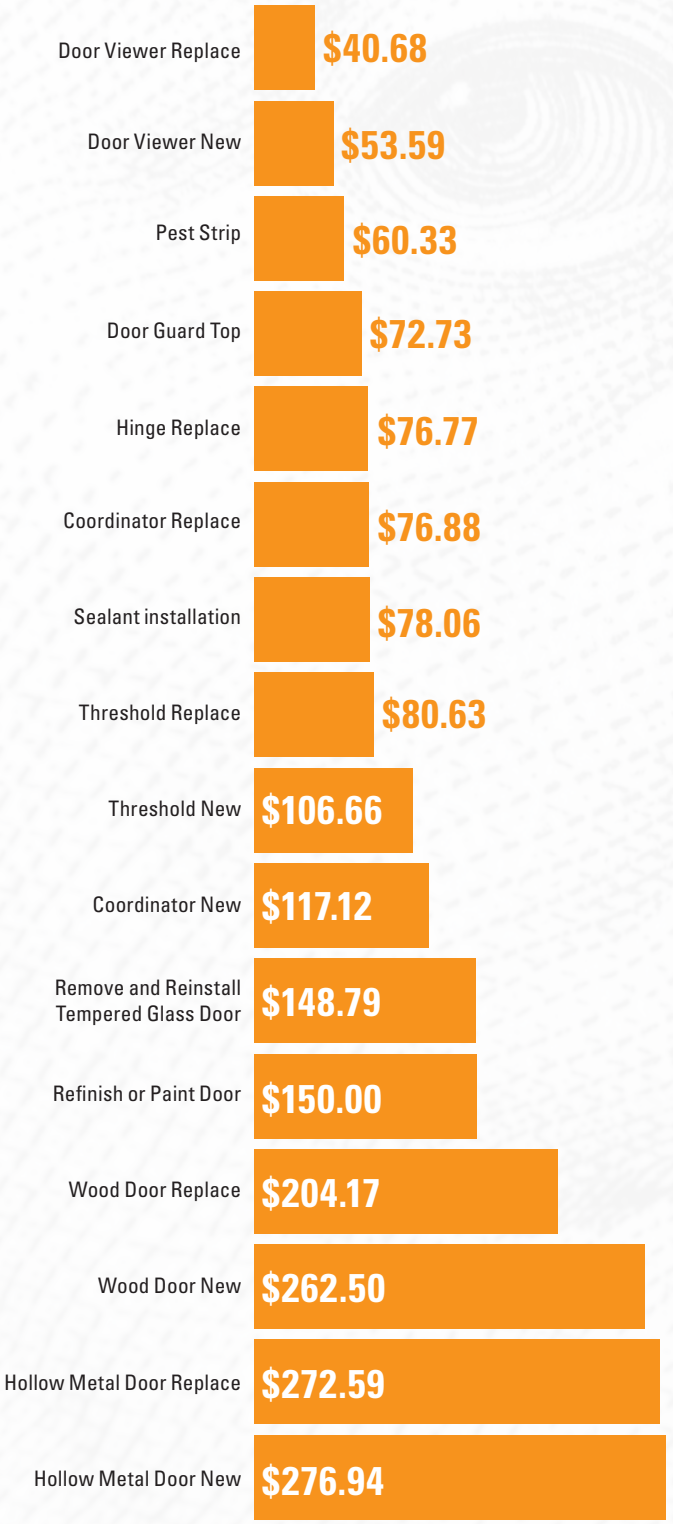
For rekeying services, shim cylinders were the lowest earners ($10.68, on average). Safe deposit locks (each nose) came in the highest at $51.89.

In 2017, what was your rate for the following types of lock installation work?



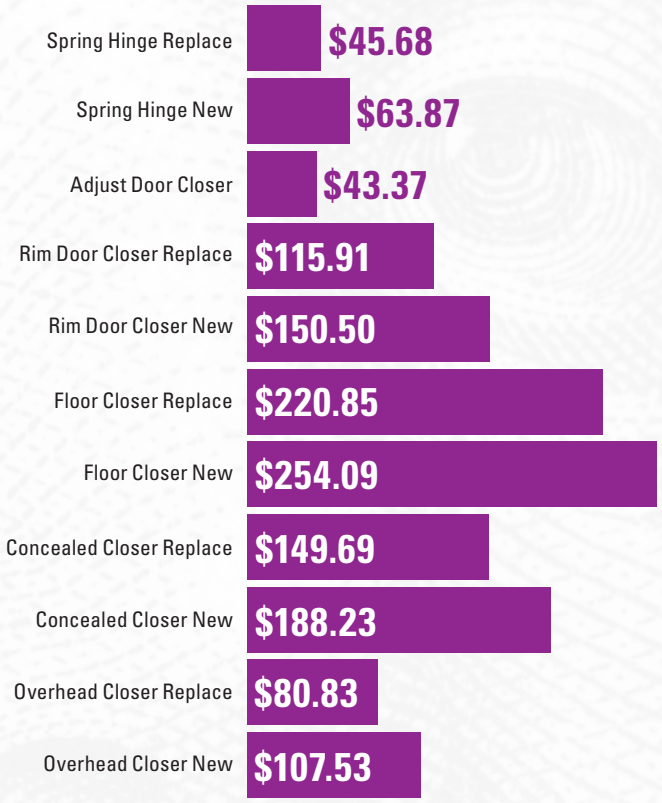
New exit device mortise, new exit Alarm Lock VR and new exit device VR — all of which were priced above the $170 mark — had the highest rates in this year's survey.

In 2017, what was your rate for the following types of door installation work?



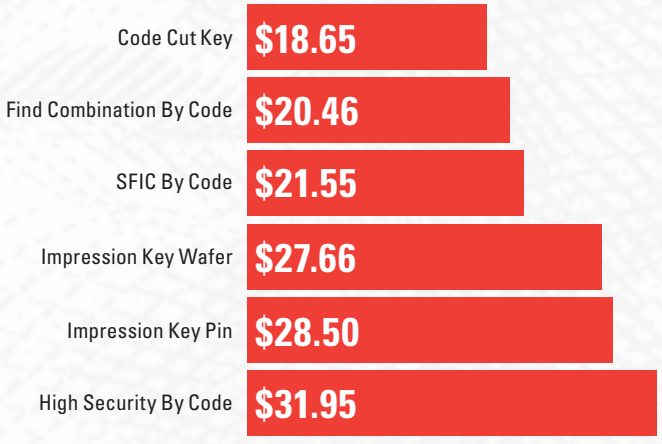
For door installation work, new and replacement hollow metal doors are the money makers.

In 2017, what was your rate for the following types of door closer work?



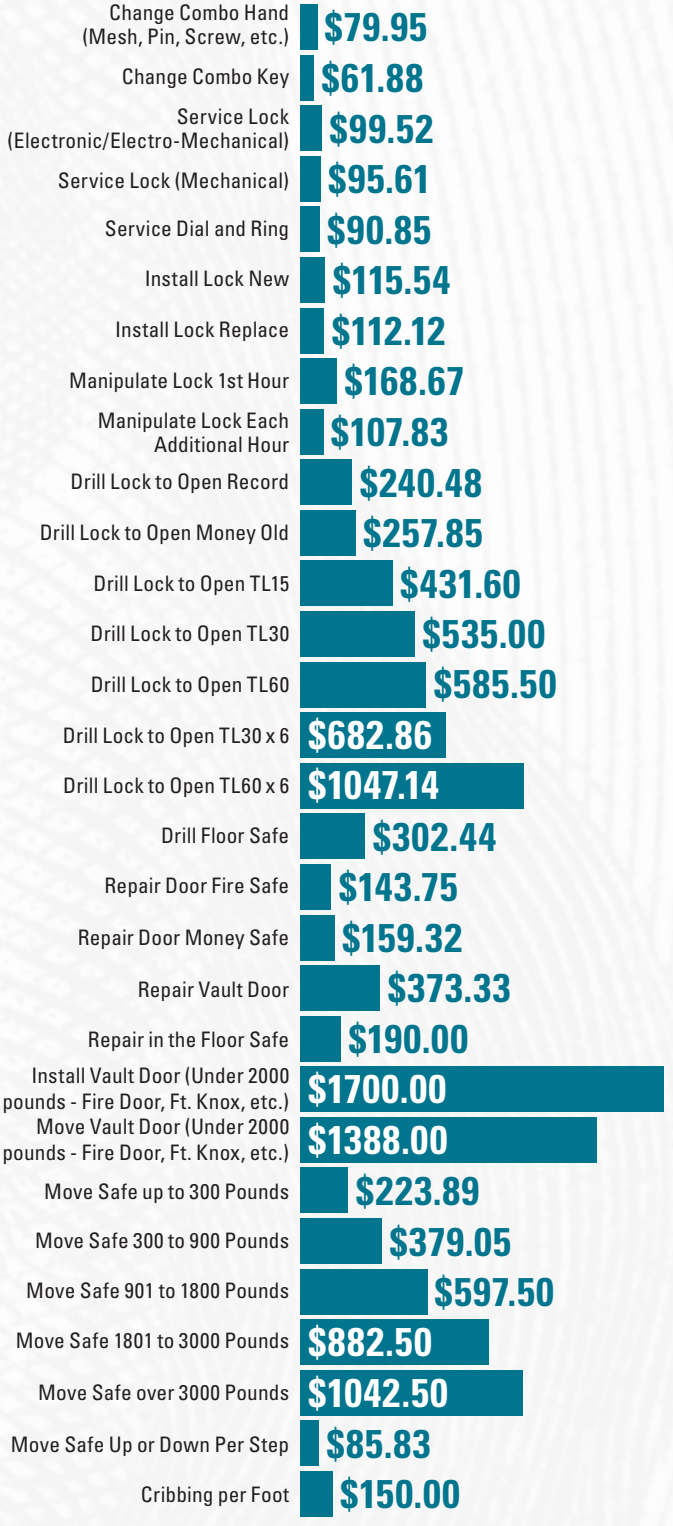
Floor closers ($254.09 new, $220.85 for a replacement) provided the highest revenue for respondents performing door closer work, with door closer adjustments on the other end of the spectrum at $43.37.

In 2017, what was your rate for the following types of padlock work?



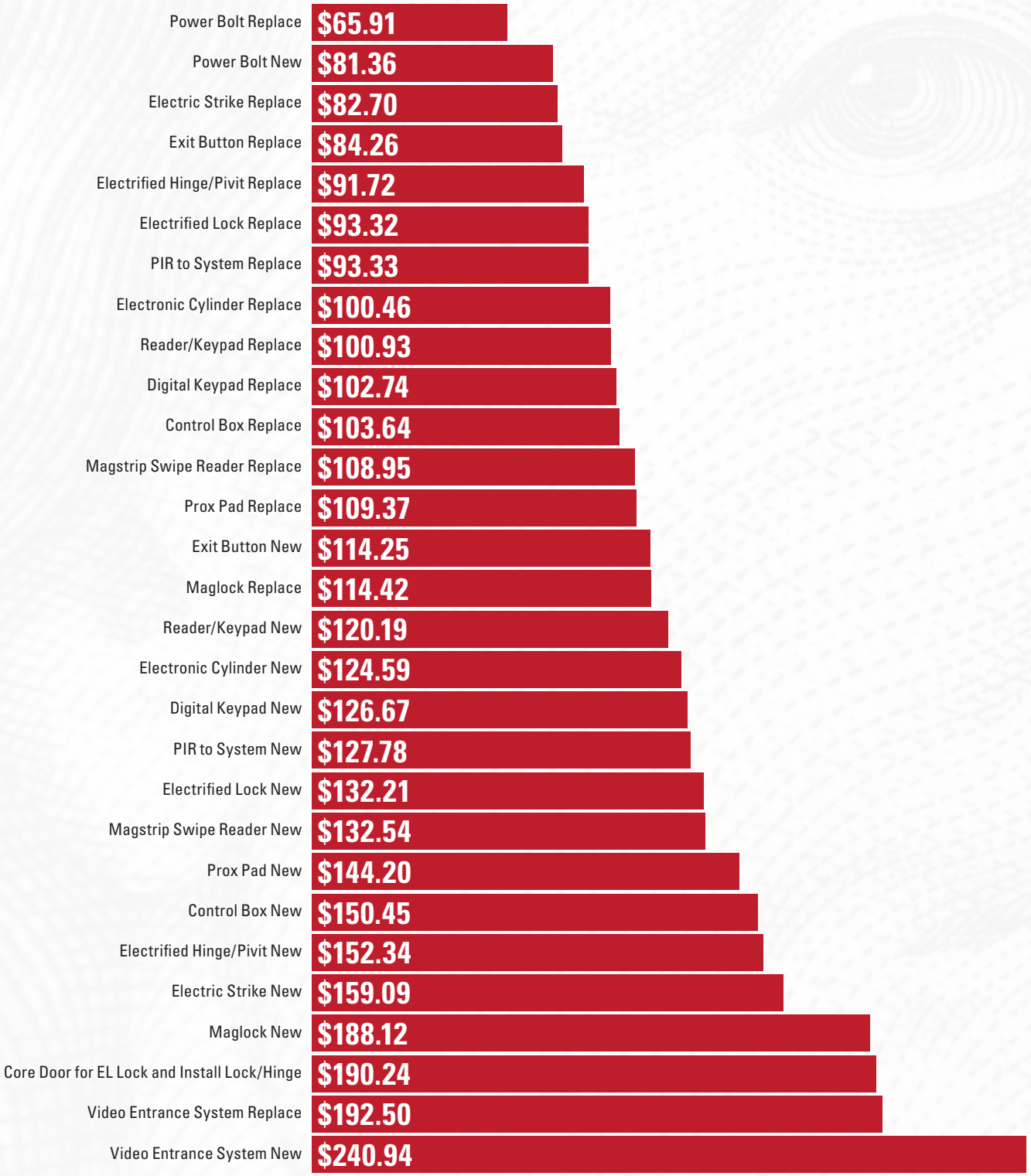
Padlock work ranged from $18.65 to $31.95, which was $4 higher than the highest padlock price for the 2015 survey.

In 2017, what was your rate for the following types of safe and vault work?



Vault door work is again the most lucrative. Nearly across the board, safe and vault work saw increases in pricing since 2015.

In 2017, what was your rate for the following types of work regarding installation of electric locks, strikes and maglocks?



Since the 2015 survey, several types of electronic work have seen price increases, including new maglocks, up about $34 to $188.12. Once again, video entrance systems and core door for EL lock and install lock/hinge work came in at the highest pricing for this type of work.

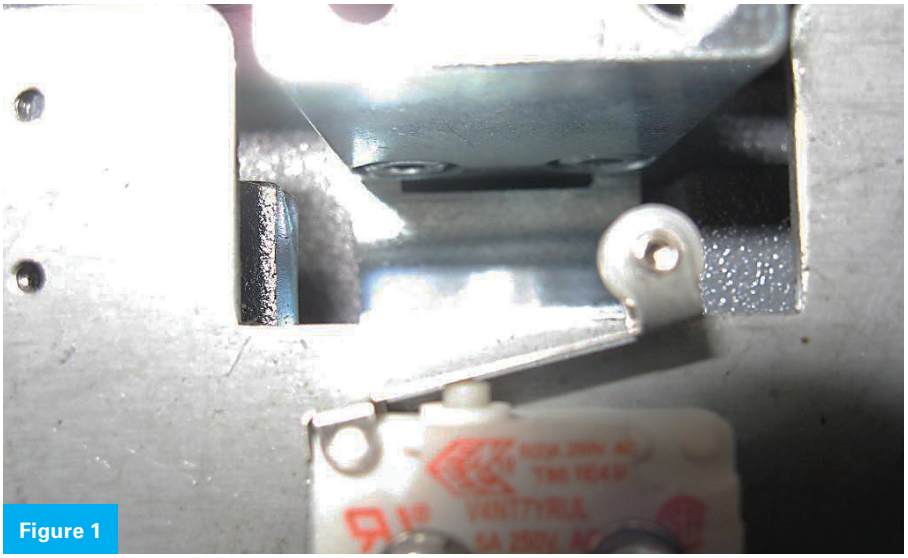


Figure 1

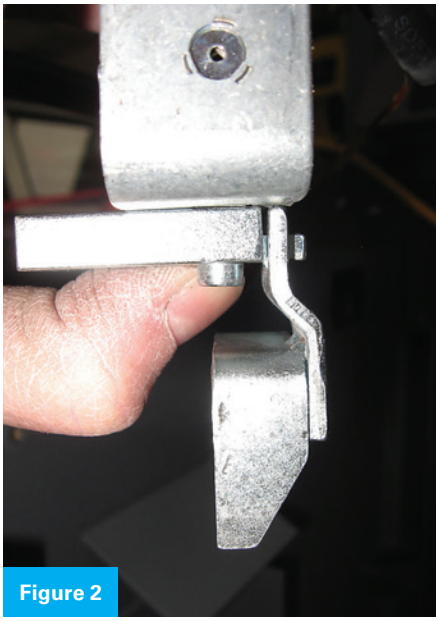


Figure 2

Figures 1-3. On these safes the relocker "dangles" from a block attached to the lock bolt. (*Figure 1* is from another safe, but it shows the relocker in its correct position.)

DEALING WITH A DANGLING RELOCKER

A run-of-the-mill NCR opening quickly turns into drilling drudgery.

By Bob DeWeese, CML, CPS, CJS, ACI

Figure 3

Well, it was bound to happen eventually, I suppose.

It started out as a run-of-the-mill NCR opening. The Cencon would take the combination, "OPr" would come up on the display, but the lock wouldn't unlock. If you get the OPr display and it stays on for the normal amount of time (about 5 seconds), the odds are fairly good that using a deadblow hammer on the door while turning the dial will get it to open. On the other hand, if you get the OPr and it immediately goes out as soon as you start turning the dial, it's probably not going to open that way. That was the case this time, so I didn't try very hard with the hammer trick, and I went out to the truck to bring in the drilling box.

The Dreaded Sound

Drilling the lever pin and getting the lever to drop was a piece of cake. So I should have known things were about to go downhill fast!

I went to turn the handle and heard the dreaded "clank." Still hopeful, I fiddled with the spindle a while, figuring maybe I didn't have the lock bolt retracted all the way. But after looking through a scope into the hole, I could see that it was. So I did some diagnostics and came to the conclusion that it was the relocker.

I extended the lock bolt, applied handle pressure and felt the handle move a tiny bit when I retracted the lock bolt. Then,

"Drilling the lever pin and getting the lever to drop was a piece of cake. So I should have known things were about to go downhill fast!"

with turning pressure still applied to the handle, I tried extending the lock bolt again. It wouldn't extend. Relocker!

Targeting the Relocker

Now, on these units, the relocker "dangles" from a block attached to the lock bolt (*Figures 1-3*). (*Figure 1* is from another safe, but it shows the relocker in its correct position. After the job was done, I wanted to get out of there, so I didn't hang around for the NCR tech to install the new lock with the relocker attached.)

The intended purpose of this relocker is to disconnect from the bolt block and drop down to block the handle cam if someone attempts to punch the lock bolt. Knowing that, I didn't punch the lock bolt; I was perplexed as to how the relocker had fired. Nevertheless, that seemed to be the culprit, so that's where I headed next.

Bits, Bits and More Bits

I mapped out where I wanted to drill going on my best "hunch" (*Figures 4-6*). (I've never had to drill for a relocker on one of these before.) I wanted to come in right at the bottom of the bolt block and see if I could fish the relocker up from there.

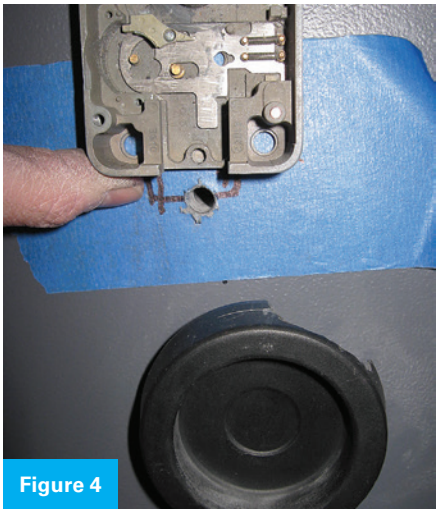


Figure 4


Figure 5

Figure 6

Figures 4-6. The author mapped out where he wanted to drill, going on his best "hunch."

Figure 7

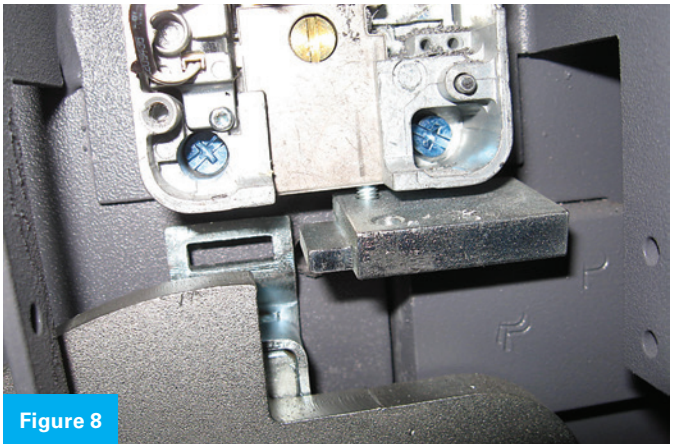


Figure 8

Figures 7 and 8. These images show what was revealed when the door was open. The relocker below could be seen, but why it had dropped had been unclear.

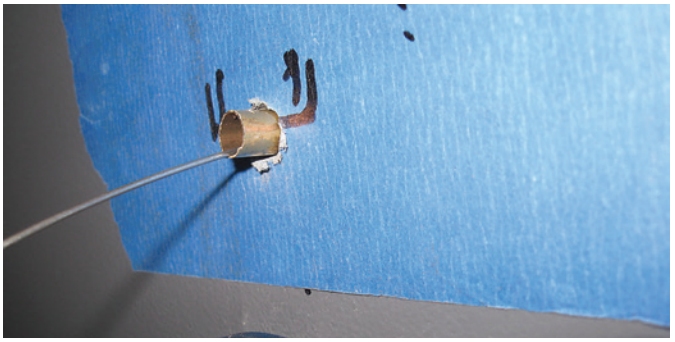


Figure 9. A piece of brass tubing a little longer than the thickness of the door was inserted into my 5⁄16-inch hole.

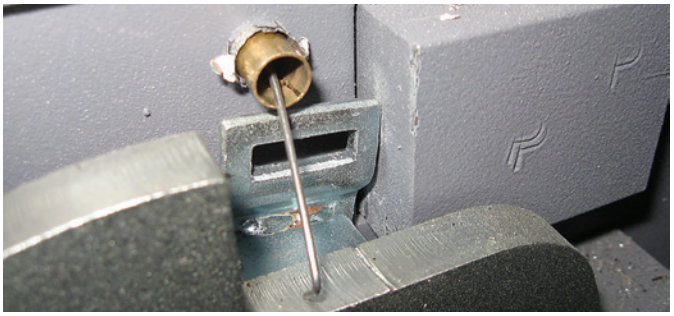


Figure 10. The tubing allowed the wire to be inserted all the way into the door, keeping the bend in it so it would drop down as soon as it exited the tube.

Drilling the hole was miserable! None of my templates (including my Helix) would go to where I wanted to put the hole, so I used my Minivac. I ran into a couple of problems. First, because the Minivac makes the Minirig stand off the door so far, I had to use 6-inch long, ¼-inch and 3⁄16-inch bits. The 3⁄16-inch bit kept flexing in the 5⁄16-inch hole. On this type of hardplate, I like to alternate between a 3⁄16-inch, ¼-inch and 5⁄16-inch bit. It works great! (That's my "secret system." Please don't tell anybody!)

Another problem I had was that the Minivac kept popping off the door when I put the kind of pressure on it that I needed. Now, in all fairness, the Minivac is a great little vac rig for most jobs. But it won't handle the kind of pressure that a big, full size vac rig (which I didn't have with me) will.

A third problem was that I went through several bits. They (especially the 3⁄16-inch bits) kept snagging and blowing the tip. It kind of felt like there were ball bearings, but I never bothered to look because I've never run into ball bearings on these ATMs before. (I didn't on this one either when I drilled for the lever pin.) But according to Mark "Thor" Caudill, they *do* have ball bearings, and I have no reason to doubt him.

Anyway, I eventually got a hole in it.

Down to the Wire

Looking down in the hole with my scope, I could plainly see the relocker below, but I still had no idea why it had dropped. I never looked up with the scope. But here's what I found when I *finally* got the door open (*Figures 7 and 8*).

My plan was to insert a stiff wire with a bend in it and a "hook" on the end. But because of the thickness of the door and multiple layers, I couldn't get the wire all the way into the hole with the bend that I wanted in it.

I keep some brass tubing in my truck (found it at a hobby shop), so I cut a piece to a length a little longer than the thickness of the door and inserted it into my 5⁄16-inch hole (*Figure 9*). This allowed me to get the wire all the way into the door and still keep the bend in it so that it would drop down as soon as it exited the tube (*Figure 10*).

Once the wire was inside the door, I removed the tube and had enough room to put a thin scope in along with the wire to get it into position. It took a few (well,

"I was perplexed as to how the relocker had fired. Nevertheless, that seemed to be the culprit, so that's where I headed next."

more than a few) tries to get it in front of the relocker, though the slot, and turned so that it was hooked (*Figures 11 and 12*).

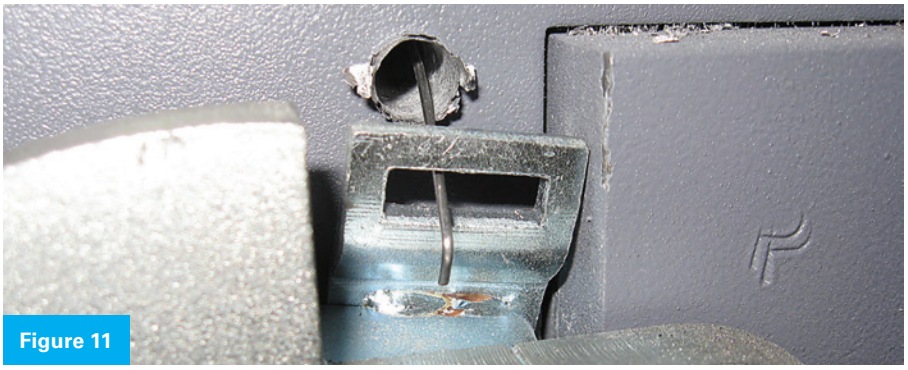
I was able to fish it up, but not far enough to clear the handle cam. I used Jerry Forder's probe tool (LOVE THAT THING!) to finagle the relocker up enough to allow the handle cam to turn. It still took some doing, and it just barely cleared (*Figures 13 and 14*).

Finally Finished

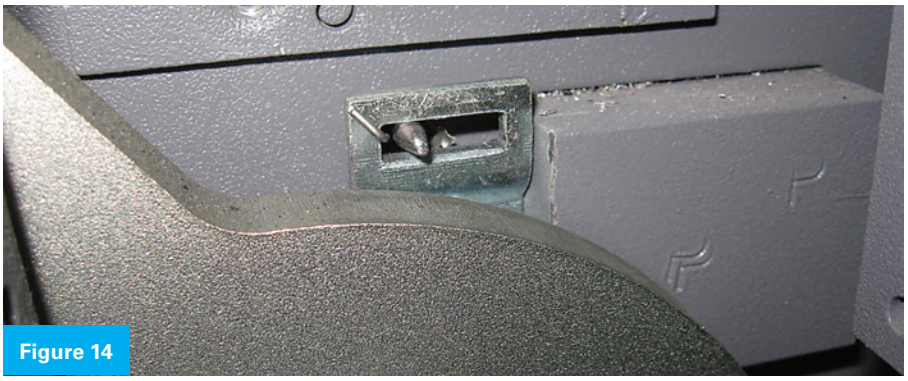
Next time (if there is a next time), I'll probably make my hole just a little bit higher. But not too much higher, or it would make hooking the relocker even harder.

I was on site a total of 4½ hours. (The last half hour of it was taking pictures and throwing all of my crap back into the truck. I figure another hour — once it warms up — to straighten out *that* mess!).

Bob DeWeese, CML, CPS, CJS, CAI, has been in the locksmith industry since 1980. He began specializing in safe opening and servicing in the late '90s. "Bobby" lives in Baltimore, MD, where he and his wife, Theresa, own and operate Bear Lock & Safe Service, which they started in 1988.



Figures 11 and 12. It took several tries to get the wire in front of the relocker, through the slot, and turned so that it was hooked.



Figures 13 and 14. A probe tool was used to finagle the relocker up enough to allow the handle cam to turn.

Figure 1. When the pins in the cylinder don't line up as seen in this photo, the core won't go in.

Figure 2. Fixing the issue of the cam dropping down requires some white lithium grease and some type of tool such as a Best cylinder wrench or the black plastic tool that comes with Best mortise locks, both shown in this image.

Sticky Situations

Tony Wiersielis, CPL, CFDI, details how he recently solved a few problems — and provides a few useful tips.

This month, I've got some interesting problems I've had to deal with in the recent past, plus a few tips and tricks you might find handy.

The first issue was with a Von Duprin panic device with a battery-operated exit alarm package. The complaint from the maintenance guy was that he couldn't remove the key when he tried to arm or disarm it. This sounded a little strange, so I took a look at it and found a number of problems.

The first was that someone installed the IC core with the cam on the mortise cylinder upside down. I've found this to be fairly common when a layman is entrusted with a control key and expected to know what to do with it. What made this more likely to happen was the fact that the cylinder was mounted sideways on the panic bar.

For the newer folks: The reason this can be an issue is because when the cylinder is installed sideways, the cam tends to drop down, making it difficult to get the core installed. What happens is that the pins in the cylinder, over which the core fits, don't line up as in *Figure 1*, and the core won't go in. As many times as you might try to place the pins in the correct position, as soon as you let go of them, gravity wins, and the cam drops again.

"When the cylinder is installed sideways, the cam tends to drop down, making it difficult to get the core installed."

The answer is the following neat little trick, which requires some white lithium grease and some type of tool such as a Best cylinder wrench or the black plastic tool that comes with Best mortise locks, both shown in *Figure 2*. You should have one of the tools and the grease on your truck already.

If you have a side-mounted cylinder that's giving you trouble, put a small dab of the grease on the end of either tool, as in *Figure 3*. Insert the tool in the cylinder over the pins, turn to the proper position and remove the tool. The cam should stay in place so you can install the core without aggravation and move onto something else. Use common sense here and don't overdo the grease; a little goes a long way.

This is probably what happened when the maintenance guy installed the core: He turned the cam to the upside-down position and it stayed in place, so he put the core in, not knowing any better. I fixed that and moved on to the second issue.

Figure 3. If you have a side-mounted cylinder that's giving you trouble, put a small dab of the grease on the end of either tool.


Figure 4


Figure 5

Figures 4 and 5. Shown is a gold-colored ring with a knurled edge on it as it was installed and then after the author unscrewed it.

Figure 6. The arrow to the left points to what the cam hits to move the silver ring from the armed to the disarmed position and vice-versa. The arrow to the right shows the small arc in which the ring moves to activate or deactivate the micro switch.

Figure 7. The gold ring is right-side up and about to be tightened down.

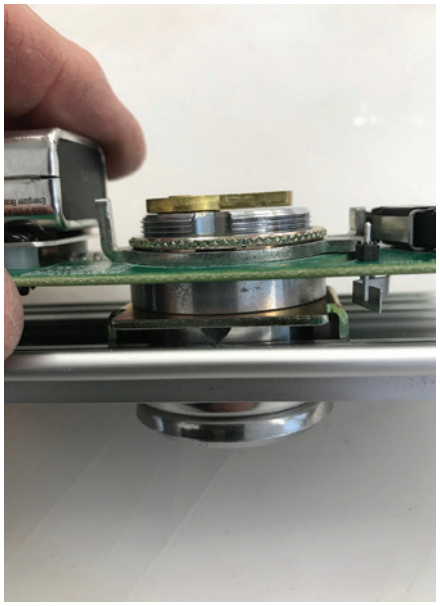


Figure 8. Both rings are properly installed; you can see a slight space between them, allowing free movement.

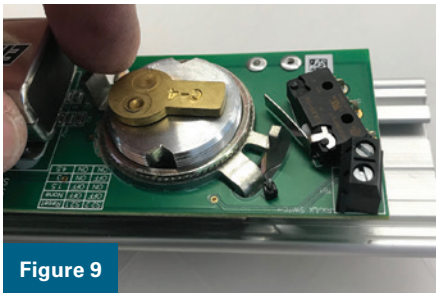


Figure 9

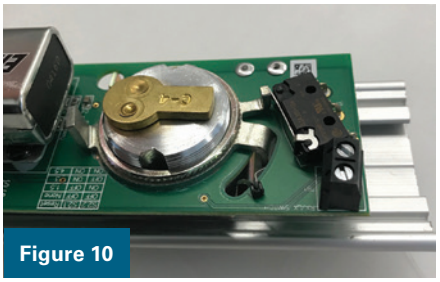


Figure 10

Figures 9 and 10. The author's finger is moving the silver ring from the deactivated position to the activated position.

He said the key was hard to turn and the cylinder was loose. If you take a close look at *Figures 4 and 5*, you'll see a gold-colored ring with a knurled edge on it as it was installed and then after I unscrewed it. In *Figure 4*, you can see marks from where he used pliers to tighten it.

Look at *Figure 6*, which shows the knurled, threaded ring removed. The arrow to the left points to what the cam hits to move the silver ring from the armed to the disarmed position and vice versa. The arrow to the right shows the small arc in which the ring moves to activate or deactivate the micro switch.

Figure 7 shows the gold ring right-side up and about to be tightened down. Notice that the gold ring fits inside of the silver ring. This allows the gold ring to tighten the cylinder in place while allowing the silver ring to move freely. *Figure 8* shows both rings properly installed; you can see a slight space between them, allowing free movement. *Figures 9 and 10*

"What you want is just enough wire to allow you to slide the alarm unit off the bar easily."

show my finger moving the silver ring from the deactivated position to the activated position. *Figure 11* shows the front of the cylinder and core.

The reason why the key was hard to turn in the beginning was because the gold ring was upside down and tightening down the silver ring, preventing it from turning freely. Remember those plier marks on the gold ring? I had to

Figure 11. This photo shows the front of the cylinder and core.

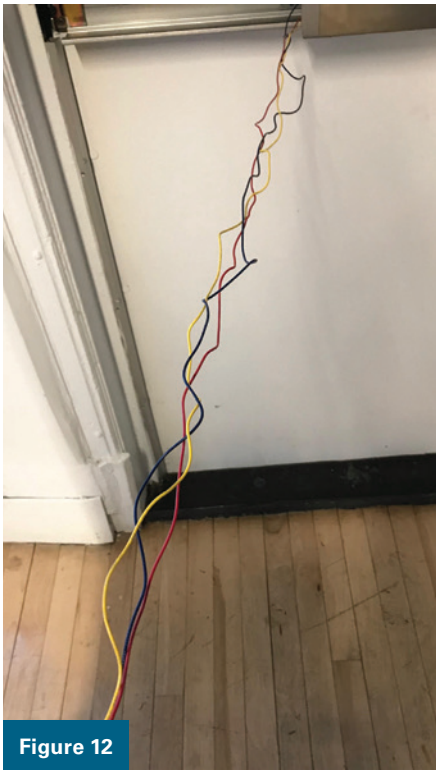


Figure 12

Figure 13

Figures 12 and 13. *Figure 12* shows how much wire was packed inside the bar, and *Figure 13* shows how the wire was damaged by contact with moving parts.

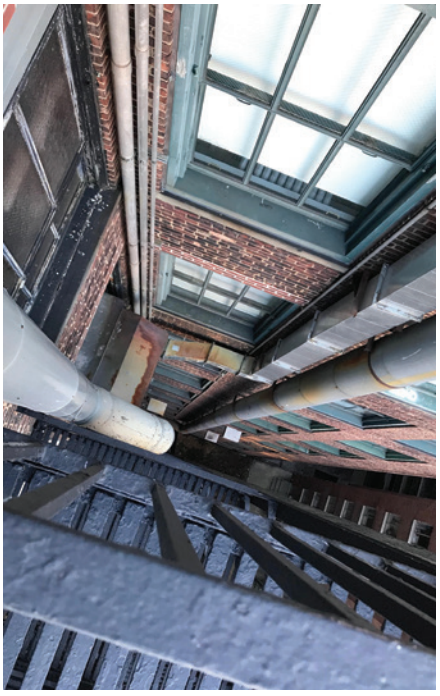


Figure 14. This photo provides an example of why you want to keep your worksite clean and neat. If you drop an essential screw or small part, you could be walking down 10 flights of stairs to retrieve it.

Figure 15. The customer had to force a core in, and it then was extremely difficult to turn and could only be halfway removed.

Figure 16. The author drilled a hole through the back of the cylinder so he could attempt to push the core out the front.

Figure 17. The drill bit is in the cylinder.

Figure 18. This photo shows the deformed clip that caused an issue.

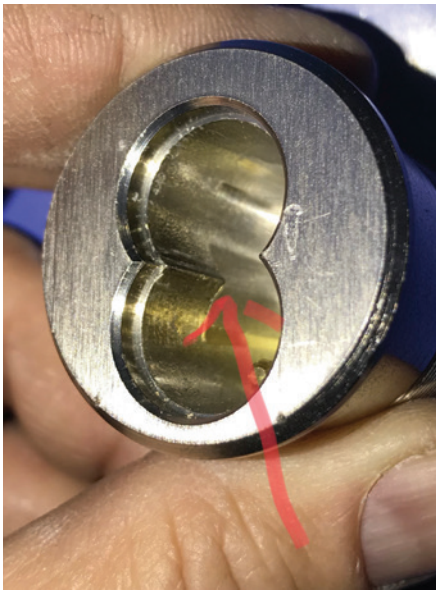


Figure 19. The clip sticking out caused difficulty turning the key and jammed against the projection that the locking dog on the core hits against, shown by the arrow in this image.

Figure 20. The replacement clip is in place.

carefully file down the burrs so the silver ring would turn freely.

The third issue was not apparent until I took the bar apart. *Figure 12* shows how much wire was packed inside the bar, and *Figure 13* shows how the wire was damaged by contact with moving parts. There's no need for this. What you want is just enough wire to allow you to slide the alarm unit off the bar easily. I wound up cutting the wire and reconnecting it without all the unnecessary slack.

Figure 14 is the 10-story drop from the fire escape that the door opened onto. This is an example of why you want to keep your worksite clean and neat. If you drop an essential screw or small part, you could be walking down 10 flights of stairs to retrieve it.

A Sticky Situation

This one started with a call from a customer after a recent installation project. One floor of a technical center had been set up as 10 adjoining laboratories with connecting doors on both sides of each lab. The company that leased it had changed their mind and never moved in, and the place stayed empty until the lease ran out.

When it did, the owner decided to divide it into individual labs, so we wound up replacing all the existing passage sets with Best 45H communicating function mortise locks. When we were done, the customer installed the cores.

The complaint was they had difficulty installing one core. They had to force it in, which is never a good thing to hear. Once in, it was extremely difficult to turn and couldn't be removed. It only came out halfway, as you can see in *Figure 15*. I hadn't experienced this before, so I had to figure out a way to get the core out without drilling it.

I suspected that the "C" clip that holds the plug in the core might be out of place. I decided to drill a hole through the back of the cylinder so I could attempt to push the core out the front. With the plug pulled out halfway, I was able to move the cam enough to drill at a point centered on the top of the core. Had it been a different cam, like a "Yale" or Best C4 cam, I probably could have drilled right through it.

Figure 16 shows the hole. You can see a mark from the tip of the bit. Obviously, you want to drill slowly to avoid the "breakthrough lunge" that could destroy the core and force you to build a new one. *Figure 17* shows the drill bit in the cylinder. A couple of taps with a screwdriver handle were enough to pop the core out.

Figure 18 shows the deformed clip that caused the issue. It was probably loose going in and got bent when it was forced in. The clip sticking out like that caused difficulty turning the key and jammed against the projection that the locking dog on the core hits against, shown by the arrow in *Figure 19*.

Figure 20 shows the replacement clip in place. If I had to do it again, I might do two things differently. I'd probably use a punch instead of tapping the drill bit, although there was no damage to the core other than a few marks.

Figure 21

Figure 22

Figures 21 and 22. If you have a metal box behind your strike and you don't need the black plastic strike box you get with a Best mortise lock, don't discard them. Cut off the tabs with a scissor (*Figure 21*) and you'll have some handy ready-made strike shims (*Figure 22*).

Second, I think I would try prying off the cam to see if I could reach the clip to move it back in place so I could pull the core out. This is only viable if you either have a new cylinder or can reinstall and peen over the cam. Best offers a cam kit with the pins and the tool you need to change or reinstall the most popular cams.

A Trick

If you have a metal box behind your strike and you don't need the black plastic strike box you get with a Best mortise lock, don't discard them. Cut off the tabs with a scissor (*Figure 21*) and you'll have some handy ready-made strike shims (*Figure 22*). Never use these on fire doors.

Parting Shot: Only in New York

Figure 23. I work as a subcontractor for a college in Manhattan two days a week. I ran into this young woman who told me the key was her spare. You really can't make this stuff up.

Tony Wiersielis, CPL, CFDI, has more than a quarter century 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.

ALOA

ALOA Security Professionals Association, Inc.

Membership Application

CANDIDATE PLEASE TYPE OR PRINT

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

Business Name _____

Mailing Address _____

City_____ State_____ Zip Code_____ Country _____

Work Phone_____ Home Phone_____ Fax _____

Email Address_____ Website _____

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

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

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

PROFESSIONAL INFORMATION

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

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

Are you licensed to perform Locksmith/Access Control work in your state? ❑ Yes ❑ No If Yes, License # _____

Business License #_____ EIN # _____

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

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

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

_____

Number of Employees_____ ❑ Store Front Business ❑ Mobile Only

How did you learn locksmithing/access control? _____

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

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

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

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

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

Name_____ Company_____ Phone Number _____

Name_____ Company_____ Phone Number _____

IMPORTANT: Have you ever been convicted of a felony? ❑ Yes ❑ No If yes, please give details on a separate sheet.
All convictions are reported to the Advisory Committee for review.

A routine background check is performed on all new applicants, unless you live in a State in which passing a background check is a part of the licensing requirements. Non-US citizen background checks are required. If you live in a country that does not allow third party background checks, you will be required to submit an authentic report upon request (no copies/duplicates allowed) before final membership approval can be granted. A copy of your business permit/license, license number, business card, company letterhead or suitable proof of employment in the locksmith/access control business must accompany application.

TYPES OF MEMBERSHIP AND REQUIREMENTS

Check only one box from the categories listed below:

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

❑ US and US Territories	$242	❑ I elect to Go Green	$222
❑ International	$260	❑ I elect to Go Green	$190

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

❑ US and US Territories	$50

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

❑ US and US Territories	$242	❑ I elect to Go Green	$222
❑ International	$260	❑ I elect to Go Green	$190

Probationary Membership – No Sponsorship Required
Persons undergoing training that are new to the industry and do not know any Active member for sponsorship. Probationary period extended from 90 days to one (1) year. Probationary status lifted if sponsor acquired within year. Must obtain license if residing in State requiring licensure. A second background check will be performed by ALOA after 2 years of the 3 year maximum term. Any violation of ALOA Code of Ethics during probationary period will result in immediate termination of membership.

❑ US and US Territories	$242	❑ I elect to Go Green	$222
❑ International	$260	❑ I elect to Go Green	$190

Allied Membership
Persons whose position in the locksmith/access control industry relates to locksmiths, and cannot qualify for any other class of membership.

❑ US and US Territories	$242	❑ I elect to Go Green	$222
❑ International	$260	❑ I elect to Go Green	$190

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

DUES AND FEES

An application fee and the appropriate dues must accompany the application in order for processing to begin.
Application Fees Schedule:

US and US Territories $70
Canada, Denmark, Ecuador, New Zealand $160
Australia, Bahamas, Barbados, Belgium, Belize, Bermuda, China, France, Haiti, Philippines, UK $210
Israel, Korea, Papua New Guinea, Saudi Arabia, United Arab Emirates $360
Applicants from countries not listed must submit background check and report from local Law Enforcement with application.

FINAL CHECKLIST

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

METHOD OF PAYMENT

❑ Check ❑ MasterCard ❑ Visa ❑ American Express ❑ Discover

Card Number_____ Expiration Date_____ SEC _____

Print Name on Card_____

Signature_____ Date_____

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

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

_____

Signature Date Signed

Dues, Contributions, Gifts are not deductible as charitable contributions for Federal income tax purposes. Dues payments are deductible as an ordinary and necessary business expense. However, please note that the Legislative Assessment Fee and donations made to the Legislative Action Network ARE NOT deductible as a charitable gift or business expense.

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www.fbisecurity.com

Hans Johnsen Company
Phone: 214-879-1550
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www.hjc.com

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

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

AD INDEX

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Bullseye S.D. Locks	page 43	www.bullseyesdlocks.com	(800) 364-4899
Capitol Industries	page 51	www.capitolindustriesinc.com	(800) 567-0451 x392
ClearStar Security Network	page 60	www.clearstar.com	(360) 379-2494
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Hayman Safe	page 39	www.haymansafe.com	(800) 444-5434
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