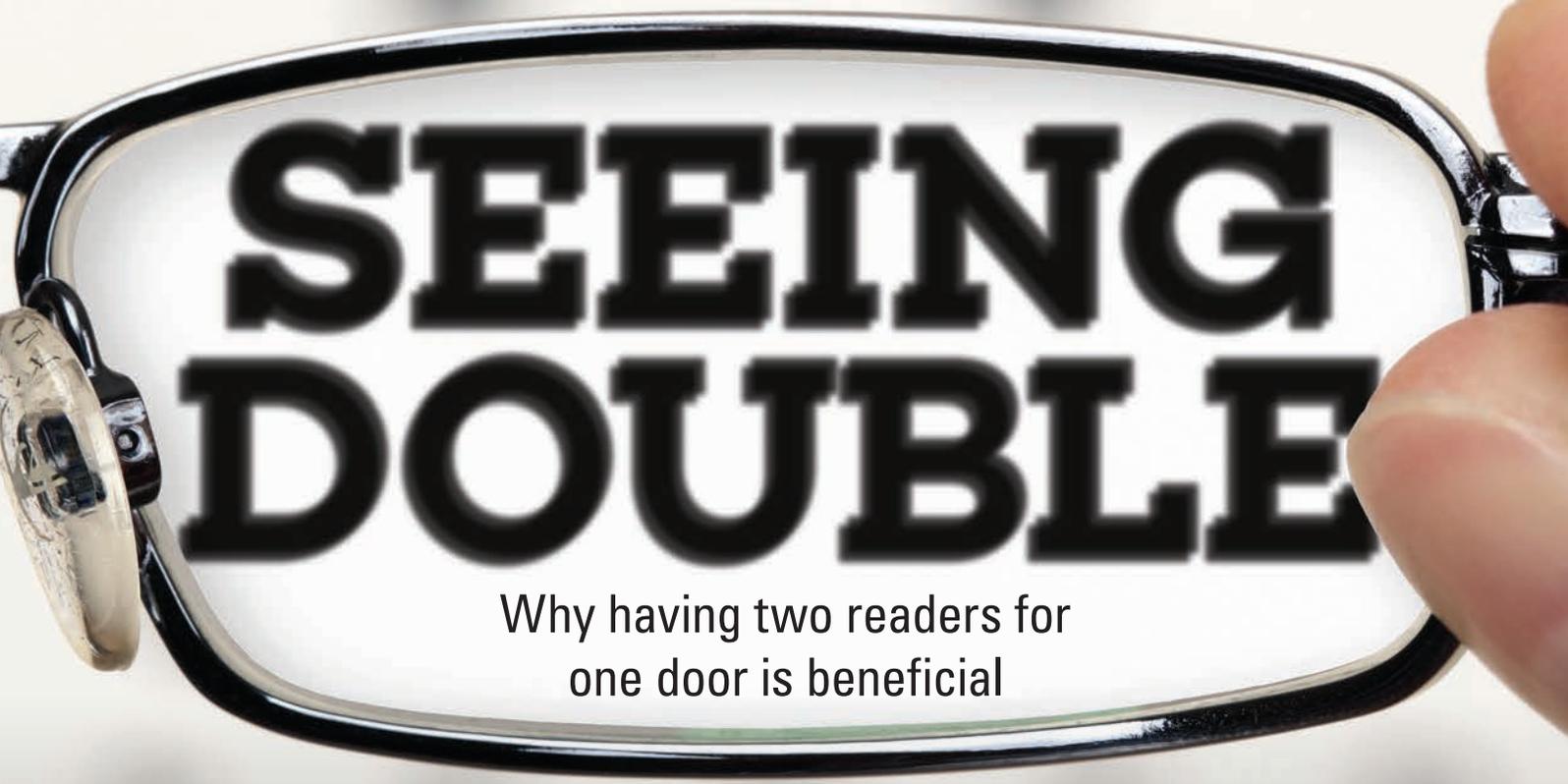


KEYNOTES

SECURING YOUR SUCCESS

A close-up photograph of a hand holding a pair of black-rimmed glasses. The lens is held up to a light source, and the words "SEEING DOUBLE" are printed in large, bold, black, sans-serif capital letters across the center of the lens. The background is a blurred, light-colored surface.

SEEING DOUBLE

Why having two readers for
one door is beneficial

Customer's Choice

Rectifying a customer's
product choice mistake

PLUS

Minimalist Master Keying, Part 2



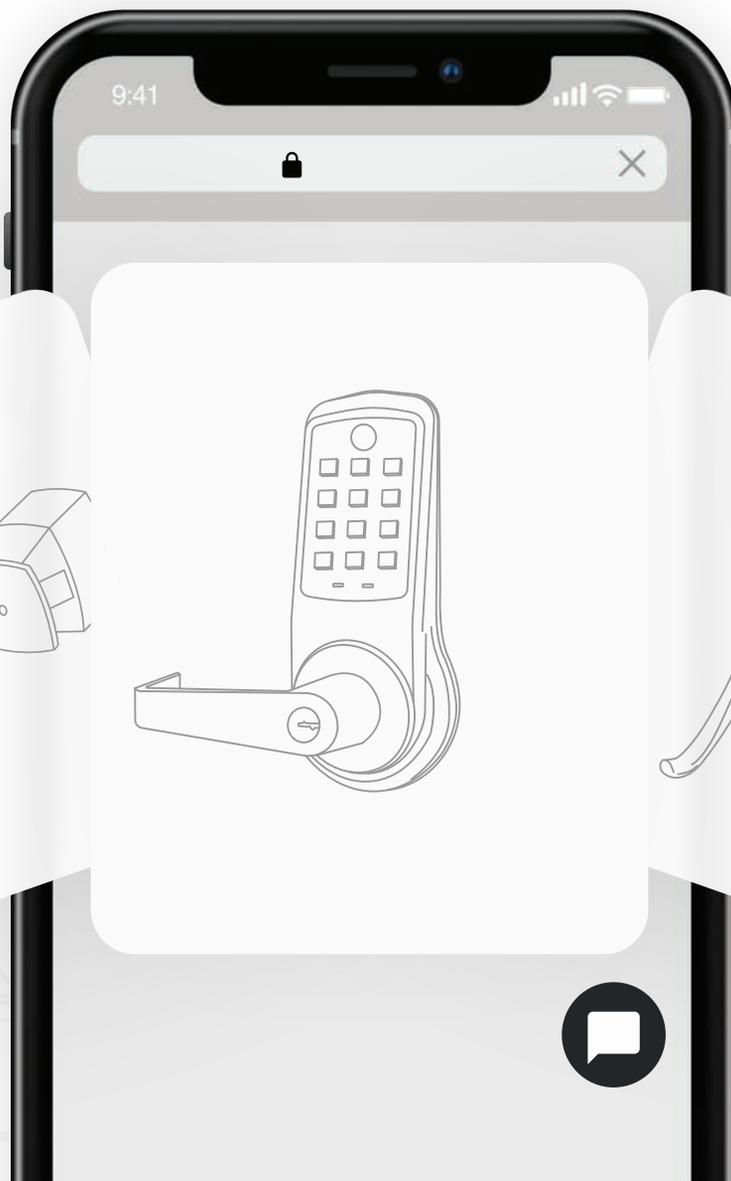
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Mission Statement: The mission of the ALOA Security Professionals Association, Inc., as dedicated members of the security industry, is to ensure professional excellence and ethics; create a public demand for professional locksmith services; represent 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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See Electronic Access Control Products at ALOA 2022

ELECTRONIC ACCESS CONTROL IS ONE OF THOSE FIELDS WHERE A LOT of money can be made. The various manufacturers have training classes on all their products, and it's smart to take all the training you can get. This seems to be one of the fastest-growing areas of our profession. New locks are constantly coming on the market, and old ones are getting reinvented with even more features. Every manufacturer seems to be trying to outdo their competition.

The 2022 ALOA Convention in Vegas will be the place to see new products and let the manufacturers and salespeople explain how they have improved. It's the last week in July at the South Point Hotel & Casino. The last time we were there, everyone had a great time. Keep your eye out for registration and class information on ALOA.org and in *Keynotes*. You can also go ahead and make your hotel reservations, too.

Welcome New Members to the Industry

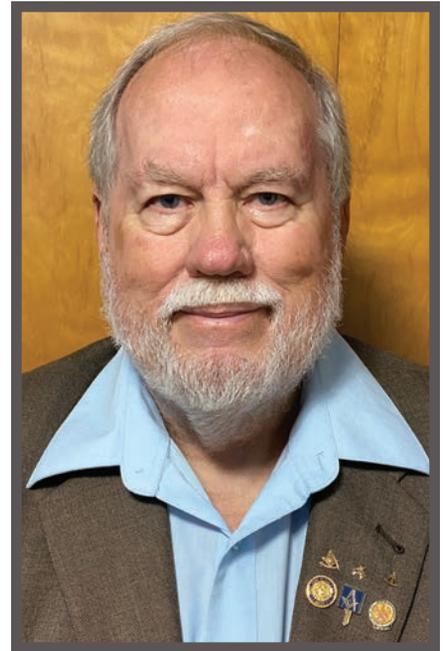
Recently, I had the pleasure of meeting one of the newest ALOA apprentice members. He is only 19 years old and extremely enthusiastic about starting his own locksmith business. It is very gratifying to see *young* people coming into the profession. If you see Fritz Bookman at SAFETECH this spring or the ALOA Convention this summer, be sure to say "hi" and welcome him into the second-oldest profession. And if you haven't registered for SAFETECH, I encourage you to go. Safe work is a great service to add to your business, and SAVTA has the best instructors you'll find anywhere. Go online to SAVTA.org to see what classes we're offering.

Whatever else you do this month, do not forget Monday, February 14. Valentine's Day is the perfect day to take your spouse or significant other out to a nice dinner. It's through their support that most of us have an enjoyable business to work at. Let's show them that they are appreciated.



Bill Mandelbaum, CML
President

ALO Security Professionals Association, Inc.
president@aloa.org



"It is very gratifying to see young people coming into the profession."

Focus on Education This Year

E DUCATION IS ONE OF THE main focal points of ALOA SPAI. As a membership organization, we are dedicated to providing educational opportunities to our members to help them in their careers and businesses. This is not just a service to individual members but also to the industry as a whole. The better educated the industry is, the more it thrives.

The pandemic has shifted educational preferences for many people. Since 2020, the association has been offering webinars on numerous topics, which has allowed many to receive CEUs from the comfort of their homes and offices.

While we were able to hold the 2021 ALOA Convention & Security Expo in Orlando and we are moving forward with ALOA 2022 in Las Vegas, our webinars continue. We hope to continue adding more topics and sessions in the future as these become one of the cornerstones of our educational program. If you have ideas for topics or have questions, please contact education@aloe.org for assistance. Be sure to keep an eye on the Education calendar on aloe.org as well so you can see what opportunities are coming up.

PRP Program

If you haven't looked at ALOA's PRP program recently, you'll notice some changes when you review it again. We've made some updates to tests, and

"The better educated the industry is, the more it thrives."

PRP candidates can now take certain tests online from their homes or offices. But in-person testing is still available too! You will have a few opportunities coming up at the SAFETECH 2022 and ALOA 2022 conventions to take prep classes and test while the material is fresh. Several classes offer after-class elective testing, so going to the convention and taking classes is a great way to earn your points.

SAFETECH 2022

If you've been looking to enhance your career by learning safe and vault work, SAFETECH provides you the best opportunity to do so. This convention has a welcoming atmosphere and a family feel, and there are classes for everyone. Whether you are new to safe and vault work or have a lot of experience, you can find classes to suit your level. Look online at SAVTA.org to view the classes being offered and see what you'd like to take. Discounted registration ends March 12, so hurry to register, and join us April 4-9 in Lexington. The hotel registration deadline is March 12 as well.



ALOA 2022

Don't forget to save the dates of July 24-30 so you can be a part of ALOA 2022 in Las Vegas. We will be back at the South Point Hotel & Casino, a wonderful property that is a short drive away from the Strip. Our world-class instructors will be teaching classes in all areas of locksmithing, from electronic access control and automotive to hardware, master keying and more. We'll even have a few safe classes for you as well.

We will soon have more information about classes for the ALOA Convention, so keep an eye out on aloe.org and in *Keynotes*. We will see you in Las Vegas for some education and networking!

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

Mary A. May

Mary A. May
Executive Director
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Don't Miss Out on SAFETECH!

SAFETECH 2022 IS COMING UP QUICKLY! JOIN US April 4-9 in Lexington, KY, at the newly renovated Griffin Gate Marriott. Learn some new skills, make some new connections and view the latest safe-related products. The Swap Meet is also a great place to pick up some new-to-you tools and collectibles.

Go online to SAVTA.org and click on the convention tab to register online, and a PDF of the registration brochure is also available there. At the end of the brochure, there is also registration form that you can print out and mail, email or fax in, if you'd prefer.

More information is available in the Main Event column on page 12, and you can email conventions@aloe.org for any questions. See you there!

HOTEL RESERVATION DEADLINE IS MARCH 12!

SAFETECH 2022

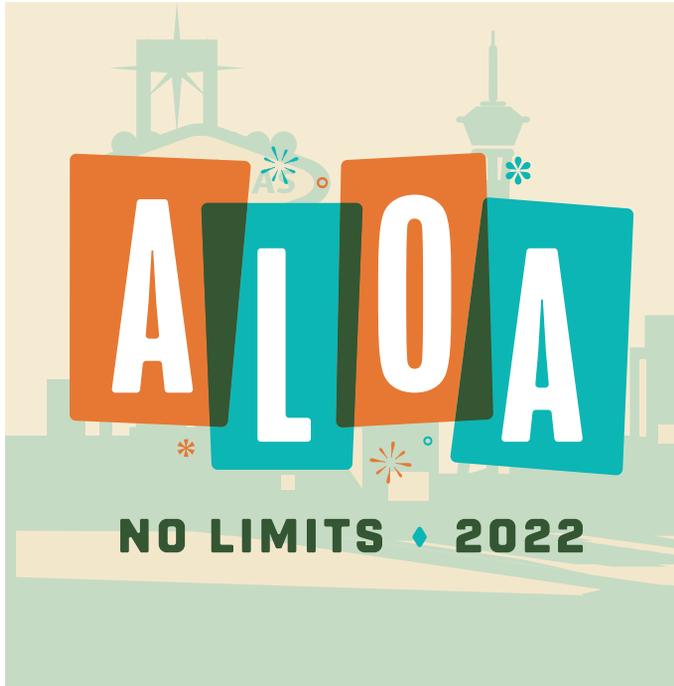
April 4-9
Griffin Gate Marriott
Lexington, KY

Register online at SAVTA.org

Hotel rate: \$129 plus tax

Hotel Reservations:

Call 877-204-8020 and mention "SAVTA" or "SAFETECH"



Save the Date for ALOA 2022 in Las Vegas

REGISTRATION IS COMING SOON FOR THE 2022 ALOA Convention & Security Expo in Las Vegas. There are no limits to what you can do at the industry's foremost event! Take classes, make connections and learn all about the latest products.

Look for registration information in the next issue of *Keynotes*, and you can keep an eye on ALOA.org for more information in the Conventions tab. Keep saving the dates of July 24-30, and we will see you then at the South Point Hotel & Casino!

NEWS BRIEFS

» **PDQ Manufacturing** has made some staffing changes: Tom Massey has retired, and the company also welcomes David Gage to the purchasing department and Andy Metz and Zach Sternberg as quoting specialists.

» **Locinox** has redesigned its U.S. website to include more features and a new layout. It has also updated pricing, and look for new products soon, such as the FortiMa SD-R. Find out more at locinoxusa.com.

» **UHS Hardware** is now carrying products made by Security Door Controls. Learn more about what's available at uhs-hardware.com.

IN MEMORIAM

» **Stephen C. Ehrlich, CML**, of Providence, RI, has passed. He had been a member of ALOA for since 1975.

» **Don Gower** passed away November 10, 2021. He has been a member of ALOA since 1989 and a member of SAVTA since 2020.

» **Raynard C. Kennedy Sr.** passed away in December 2020. He had been a member of ALOA since 2009.

» **Robert Gerald Stark**, age 89, passed on January 11, 2021. He has been a member of ALOA since 2016.

» **Roger G. Williams, CRL**, of Samson Lock & Security in Samson, AL, passed in April 2021. Williams, 75, had been a member of ALOA for 28 years

NEW APPLICANTS

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- ▶ **Daniel A. Loper**
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Montgomery Lock & Key Inc.

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Show Low

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- ▶ **Rueben J. Davis**
- ▶ **Danny R. Fuller**
- ▶ **Robert McGlynn**
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- ▶ **Alexis Dybe**
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IDAHO

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We Need Your Help

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

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CALENDAR

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

FEBRUARY

February 21-26

Six-Day Basic Fundamentals of Locksmithing
ALOA Training Facility
Dallas, TX
(214)819-9733 or education@aloea.org

APRIL

April 4-9

SAFETECH 2022
Griffin Gate Marriott, Lexington, KY
ALOA.org
conventions@aloea.org or (800) 532-2562

JULY

July 24-30

ALOA 2022
SouthPoint Hotel & Casino, Las Vegas, NV
ALOA.org
conventions@aloea.org or (800) 532-2562

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Register for SAFETECH!

Experience the unbridled spirit of the safe and vault industry in Lexington.

SAFETECH 2022 REGISTRATION IS OPEN, AND classes are filling! Join us April 4-9 for the best week all year for the safe and vault industry. After a long gap since the last convention, be prepared to experience the biggest and best SAFETECH yet.

Registration is available online at SAVTA.org on the Convention tab, where you can also find the brochure that includes the list of classes and events. Come learn all about safe locks, how to work on safe deposit locks, drill safes and more.

At the annual Friends of SAVTA Live Auction, you also have a chance to bid on tickets to Elton John's Lexington stop on his farewell tour — and that just happens to be the night of April 9! The package includes two tickets that you can't find anywhere else for face value, plus a night at a hotel close to the concert venue.

What more proof do you need? Register for classes and your hotel room today. See you there! ☺

SAFETECH 2022

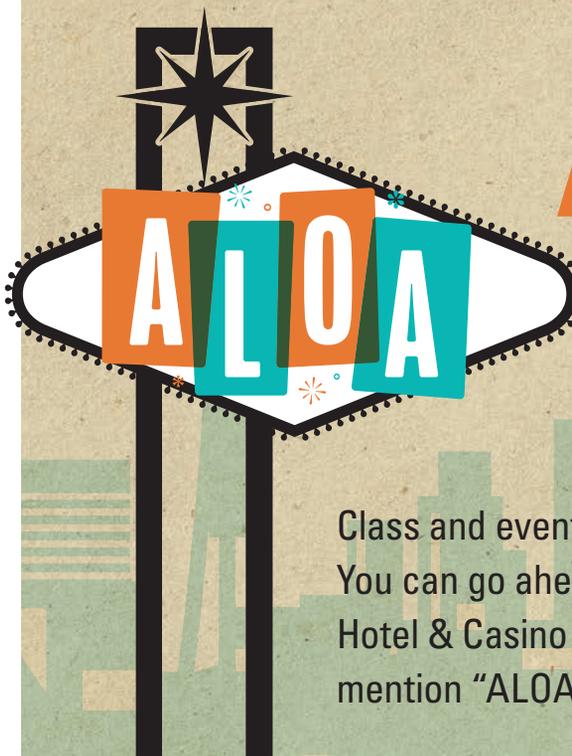
April 4-9

Griffin Gate Marriott

Lexington, KY

Hotel rate: \$129 plus tax

**Room Block Cutoff and Early
Registration Deadline: March 12**

Save the Date for
ALOHA 2022!
July 24-30
South Point Hotel & Casino
LAS VEGAS, NEVADA

Class and event information coming soon on ALOHA.org!
 You can go ahead and reserve your room at the South Point Hotel & Casino by calling (866) 791-7626. Be sure to mention "ALOHA" to get the discounted rate.



Be Systematic

James K. Ashley, CMST, CPL, CEL, CAI, CFL, explains how to work efficiently with an existing access control system.

WE FREQUENTLY RECEIVE CALLS AND REQUESTS TO ADD TO AN existing system, take over cloud monitoring/services or even just to evaluate a system for possible security upgrades. The systems that relied on Adobe Flash, for example, warranted several of these requests due to the plug being pulled on the Flash platform. I would like to address these concerns, share some ideas, and hopefully save everyone some time and money in the process.

When doing a site survey, find out the main goals of the end user. Do they need to add doors? Does a door not lock/unlock like it should? Did a credential from another system compromise their security? (Don't laugh; it has happened!) If your client is still using a 26-bit Wiegand platform, look at the feasibility of recommending a protocol upgrade. Find out how secure their facility really needs to be. Even the kiosks that copy keys are starting to be able to clone access credentials! Hackers buy cloning machines from well-known auction sites for little money, and if they can have your access credential for a few seconds, they can clone it and gain access to the building with *your* name on the event log. At least recommend they upgrade their readers and credentials to the iClass platform. Once they understand how vulnerable their existing system is, it usually ends up a welcome security upgrade.

Do they need additional functionality that their existing system doesn't offer? Do they want to upgrade doors and/or locking devices? Knowing why you're getting the call helps you steer your client in the right direction.

The Existing System

What type of system are they using? Software? Cloud? Imbedded? Would a simple software/firmware upgrade accomplish what they want? The first thing to do is look at the existing equipment. What can be reused? Is the system still manufactured? Are devices functional or acting erratically?

What readers are being used? If you need to upgrade readers, will the existing cable

“When doing a site survey, find out the main goals of the end user.”

handle the new reader protocol? What about credentials? Will new credentials work with the existing readers, or will they need to be replaced?

An Example

One multifamily site we worked with had a working system, but the business had just changed ownership. They had no way to log in and make changes. Since it was Flash-based and no longer supported, there was no real “back door,” and we recommended replacing the panel. The readers and locking devices still worked. They saw this as a logistical nightmare to possibly have to replace credentials, and residents have different schedules. Our solution was to leave the existing

system in place while the new panel was programmed. That way, the staff and residents could gain access as needed.

We set up the new system in the leasing office along with a reader. We programmed an IP address as issued by their new IT department and connected it to their network. That way, their leasing agents had access to the new system from their desk PCs. We then had them notify residents that the system was going to be upgraded, and they needed to stop by the office on their way in/out and re-register their access credential by the deadline. By scanning their card/fob on the new reader, the agents could capture the info and enroll it into the new system.

This also allowed the agents to rest assured that anyone who had a working credential actually was, in fact, authorized

“With no way to log in to the existing system, the new admin had no idea who had access to the buildings.”

to gain access. With no way to log in to the existing system, the new admin had no idea who had access to the buildings. That’s scary!

If you’re going to revamp an entire system, take some extra time to double check the local AHJ requirements regarding fail-safe vs. fail-secure devices, egress from exit

doors and the interconnection of locking devices/power supplies with the fire alarm system. Your local AHJ doesn’t have to be your enemy! They can be a wealth of information and a great resource when advising your client on code compliance and hardware recommendation. ☺



James K. Ashley, CMST, CPL, CEL, CAI, CFL, started in the security industry in 1986 while stationed at Lackland Air Force Base in San Antonio, TX, volunteering as an apprentice for B&P Lock Shop. James is an educational sponge, and being a musician is the only thing that can eclipse his love for electronics and technology... and boating. He started Ashley Safe & Security in 2001 in Indianapolis, IN, and is three-term president of the Associated Locksmiths of Indiana.

HIRING: GENERAL MANAGER FOR SPRING 2022		JOB-TYPE: FULL-TIME	
<p>Large Mid-Atlantic based Locksmith/Physical Security Company is seeking a qualified candidate for a General Manager position to oversee all staff, budgets, and operations of the local business unit. General Manager responsibilities include, but are not limited to, formulating overall strategy, managing employees (approximately 30 service vehicles and 20 office/shop staff), and establishing policies. To be successful in this role, you should be a thoughtful leader and a confident decision-maker, help our team to develop and perform productively, while ensuring our profits continue to be grow. Ultimately, you’ll be responsible for helping our company expand and thrive.</p>			
RESPONSIBILITIES:		SKILLS:	
<ul style="list-style-type: none"> • Oversee day-to-day operations • Design strategy and set goals for growth • Maintain budgets and optimize expenses • Set policies and processes • Ensure employees work productively and develop professionally • Oversee recruitment and training of new employees • Evaluate and improve operations and financial performance • Direct the employee’s assessment process • Prepare regular reports for upper management • Ensure staff follows health and safety regulations • Provide solutions to issues (i.e. profit decline, employee conflicts, loss of business to competitors) 		<ul style="list-style-type: none"> • Proven experience as a General Manager or similar executive role • Experience in planning and budgeting • Knowledge of business processes and functions (finance, HR, procurement, operations, inventory, etc.) • Strong analytical ability • Excellent communication skills • Outstanding organizational and leadership skills • Problem-solving aptitude • BSc/BA in Business or relevant field MSc/MA is a plus. 	
		<p>Please send resume with work history, education background, along with references and their contact information, and salary requirements to GMPosition2022@gmail.com</p>	



Create a New Revenue Stream by Working on Investigations

FROM TIME TO TIME, I STILL GET ASKED, “WHAT IS INVESTIGATIVE OR forensic locksmithing, and how can it be applied?” My background is that I’m a former police detective who became a part-time locksmith. Through the knowledge that I gained being a locksmith, I started to see investigations through a different frame of reference. Joining IAIL, attending classes and obtaining certifications helped me.

You, too, can use your knowledge and skills as a locksmith to create new revenue sources and work on investigations. Potential clients can be law enforcement, insurance companies, defense attorneys or private citizens.

A Notable Case

Following is one case example I worked on as a police detective. I had a case regarding a stolen Harley motorcycle where an informant had provided information. The suspect with a lifelong and lengthy rap sheet had reportedly stolen a motorcycle from my jurisdiction. At a garage used as a chop shop, the suspect had shown the witness a padlock from the stolen bike saddle bag. He laughed and said if it had been used, he couldn’t have taken the bike. He then threw the padlock down a gravel alley outside the garage.

At the time this information was revealed, the theft case was more than a year old. Although the suspect no longer lived at the known address, I was able to go to the alley and locate an old padlock embedded in the gravel. It supported the witness’s story, and I placed the lock into evidence. Knowing that motorcycles are often sentimental, I contacted the victim and asked if the victim still had the keys for the bike and padlock — the answer was yes. The key matched and opened the padlock.

I was able to use the possible combinations with space and depths plus the code series to demonstrate to the court the probability of the key fitting. It was something in the range of a 1 in 3,000 chance. Along with other evidence in the case, this led to a successful conviction of the suspect. The prosecutor at the time could not recall a padlock and key being used in such a way to support a case, particularly with the odds of the key fitting.

Knowing about locks and keys made me a better investigator. Consider joining IAIL and learning more about investigations and how to enter this field. We will have

Join the IAIL Facebook Group!

The International Association of Investigative Locksmiths (IAIL) has created a Facebook group for its members. You must “like” the ALOA Facebook page and be an IAIL member to join. The group allows members to discuss topics of interest, ask questions and more.

To join the group, visit <https://bit.ly/3Ay4UK0>.

classes at SAFETECH 2022 (registration is open!), ALOA 2022 and beyond. 🤝



Brian VanDenburgh is the president of the International Association of Investigative Locksmiths (IAIL). He can be reached at IAILPresident@aloe.org.

Get Published!

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



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or call (214) 819-9733.**





ALO A Scholarship Foundation, Inc.

Purpose

The ALO A Scholarship Foundation (ASF) is an independent, educational, non-profit 501(c) (3), Tax-exempt Corporation established in 1993 to:

- Encourage and provide for educational services, programs and materials concerning locksmithing and security devices and procedures.
- Develop scholarship and assistance programs for persons interested in pursuing a career in the security and locksmithing field.
- Solicit funds necessary to implement the purposes of the Foundation.
- Perform and do any and all such other acts as are necessary, convenient and proper for the attainment of these objectives.

What Are the Scholarships for?

The ALO A Scholarship Foundation can be an important source for educational funding. We support all locksmith efforts to seek education via technical training and business management from all educational providers. Scholarships are not limited to ALO A educational programs. While ALO A does have an impressive history in locksmith training and testing, *the independent ALO A Scholarship Foundation encourages locksmiths to apply for funding for any of the following industry related training:*

- A full ALO A convention package which includes: four or five full-day classes with lunch, two evening seminars, two half-day classes and two days of exhibits
- A full SAFETECH convention package which includes: four full-day classes with lunch, one day of exhibits and a Kick-Off party ticket
- All courses offered at the Aaron M. Fish Security Training Center and ALO A Certified Education classes, presentations and seminars offered at regional conventions and other facilities

- Industry-related education via technical training and business management programs offered by other institutions that meet the educational criteria of the ASF board
- Limited travel and lodging to the above events may be awarded depending on individual need and funds available.

Selection Criteria

The ALO A Scholarship Foundation awards scholarships for locksmith education based on several criteria, which include:

- Individual applicants' financial needs
- Written statement discussing how they will benefit from the scholarship and attesting to the desire, willingness and ability to use such training to further themselves within the industry
- Demonstration of commitment to the locksmith industry
- Industry experience; those applicants applying without industry experience must submit a detailed strategic plan on how they intend to achieve their goal of building a career in the locksmith industry
- Three letters of recommendation from individuals who have personal knowledge of the applicant's background, character and work ethic. One recommendation must be from within the locksmith industry
- Availability to attend the event for which the award is given

Application forms for Scholarships are available from the ALO A website, in *Keynotes* magazine, at ALO A and SAVTA booths at local shows and from the ALO A office by request.

Scholarship applications for the ALO A convention must be submitted by May 12, 2022. Scholarships for other educational events must be submitted at least **40 days** prior to the event being requested, in order to be given adequate consideration.

The ALO A Scholarship Foundation Board of Directors awards all scholarships within **30 days after the event deadline** for submission of applications.



ALOA Scholarship Foundation, Inc.

An educational, non-profit 501 (c) (3) tax-exempt corporation – Federal Tax Id# 75-2478220

Headquarters Office • 1408 N. Riverfront Blvd. #303, Dallas, TX 75207 • 214-819-9733 • FAX 469-453-5241

asf@ALOA.org

SCHOLARSHIP APPLICATION

Name _____ PRP/STPRP Level _____ ALOA/SAVTA# _____

Home Address _____ City _____ State _____ Zip _____

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

Fax _____ Email _____

Employer _____ Supervisor's Name _____

Work Address _____ City _____ State _____ Zip _____

Position _____ Full Time Part Time Take Home Pay _____ per _____

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

Previous Recipient? No Yes Date _____ Location _____

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

Marital Status _____ Number of Dependents _____ Annual Household Adjusted Gross Income _____

Classes Desired _____ Date of Classes _____

Organization Sponsoring Classes: ALOA SAVTA Other _____ Location _____

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

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

ALOA Scholarships are granted to selected individuals desirous of entering the locksmithing field or to selected individuals already in the locksmithing field who wish to improve their professional skills through education. The ASF Selection Committee on an objective and nondiscriminatory basis will review applications. The Selection Committee shall hold all materials and information pertaining to the applicant's financial status and background in strict confidence. Applications for non-convention classes must be received 40 days prior to the date of the non-convention class desired and will be reviewed as they are submitted. Applications for classes at the SAVTA or ALOA convention must be received 75 days prior to the event. All scholarships will be awarded within 30 days after the event deadline for submission of application.

Please include with this form your most recent Federal Tax Return and a letter stating: your financial situation, your reason for applying for a scholarship, what you plan to do with the knowledge you obtain and any other information you feel may be helpful to the Scholarship Board in making its decision. In addition, attach three letters of reference from individuals who have personal knowledge of your background and character. The letters should contain their names, addresses and phone numbers. One reference must be from a locksmith or someone in the locksmith industry, and it is helpful if the person is an ALOA or SAVTA member. All scholarship recipients will be required to provide a 3" x 5" photograph.

APPLICATION CHECKLIST

Only COMPLETE applications will be considered for scholarships. An application is considered incomplete unless ALL of the requested information is received before the deadline: **75 days for SAVTA and ALOA convention** OR 40 days prior to the non-convention classes. Please send this application after checking off each of the items below.

- I have filled in each blank on this form.
- I have written and enclosed a letter explaining my reason for applying.
- I have enclosed three letters of reference (at least one must be from a locksmith or someone in the locksmith industry).
- I am submitting **75 days prior to the SAVTA or ALOA convention classes** OR 40 days prior to a non-convention class or event.
- I have enclosed a 3" x 5" photograph.
- I have enclosed a copy of my most recent tax return.

CERTIFICATION OF APPLICANT

I certify that the information contained herein, and all supplemental forms are complete and correct to the best of my knowledge. I further certify that if I am selected as a scholarship recipient I will use the knowledge gained for the improvement, development and advancement of the locksmithing profession. Also, if asked by an authorized ASF official, I agree to give proof of the information that I have given on this application. I understand that if I choose not to provide the additional proof that I may not receive the Scholarship Award. I understand that this application is valid only for the event/class specified and is not transferable.

I understand that I may be asked to give permission to the ALOA Scholarship Foundation Inc. to perform a background check.

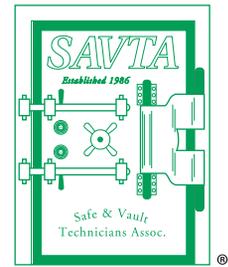
As a potential recipient of a scholarship awarded by the ALOA Scholarship Foundation, Inc. (ASF), for the purpose of receiving specialized training in locksmithing or related fields, and as a condition of accepting this scholarship should it be awarded to me, I agree that, should I fail to complete the training for which the award has been issued, without at least 30 days notice or an excused absence granted by the ASF, at the sole discretion of the ASF, I may be held liable for the amount of the awarded Scholarship and I agree to reimburse the ASF for the amount of the scholarship awarded.

Should an emergency occur prior to or during the training period that prohibits my attendance at or completion of the training, I understand that it is fully my responsibility to contact the ALOA Educational Director to make arrangements to complete the training or obtain an excused absence or I may be liable for the reimbursement of the Scholarship.

Signature _____ Date _____

Please send all completed applications to The ALOA Scholarship Foundation at the address at the top of the page.

Revised 2022



A Local Response to a National Emergency

Not all “National” emergencies are tended to by the government. **By Bryan Kruysman, CML**

OUR OFFICE GETS MANY PEOPLE CALLING SAYING THEY HAVE AN “emergency.” Most are not true emergencies; more like inconveniences. Even the ones where we try to help are not real emergencies. To me, an emergency is when blood is flowing or a bad guy is breaking in. But I don’t argue; I just can’t help them all. If someone

is trying to find a will or their meds are in the safe, that is close, but still not really an emergency.

This particular day, the guy said that he was leaving the country in a few days



Figure 1. This was the best picture we could get in a very tight closet.



Figure 2. Another label and serial number were on the inside of the door.



Figure 3. The “birth certificate” showed “gender” and birthday.

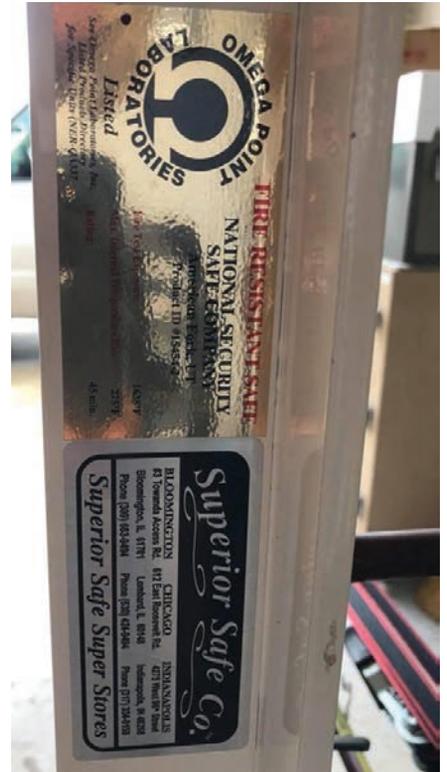


Figure 4. The label on the inside of the door is shown.



Figure 5. This is the track used to restrict throw and retraction of the bolts. You can see the hole that the offending bolt fell out of.



Figure 6. This bolt fell out and got jammed inside the boltwork, locking up the safe.

and his passport was inside a National Security safe that would not open with the code. This is still not an emergency; if he misses his flight, nobody’s going to die, but I was going to try to help him.

On lockouts, we always have them change batteries first using brand-new

out-of-the-package Duracells or Energizers. Sometimes, I’ll have them do it twice. After taking the electronic safe lock defeat class from Ryan Taylor at the SAFETECH convention last year, I don’t know what to tell people about batteries. Ryan does a great lecture on batteries,

but I left not knowing a perfect battery to recommend, so I tell them to do it twice. For sure, putting a second battery in is cheaper than my service trip, so I just tell them to do it. On this particular safe, batteries were not the issue, so I needed to make a service call.

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The Ever-Changing Key

THE AUTOMOTIVE KEY HAS UNDERGONE several innovations in the last several years. There was the basic key with a chip (first producing a single code and then rolling codes) that starts a vehicle via the ignition and immobilizer systems and can lock and unlock doors via the key cylinder. Then came the bladed ignition key with remote to lock and unlock doors and trunk. Next came the key fob with remote to unlock and lock doors and start push-button ignition vehicles. Newer designs use radio waves to communicate with the vehicle. When the key is in 16 to 65 feet, the transmitted radio wave will unlock the vehicle doors. These systems really redefined what a key was, and new technologies are doing that today. Several vehicle brands offer cellphone apps that enable users via advanced telematic systems to unlock doors and start ignitions. Apple phone enables users to store their vehicle “key” within its Wallet app and, depending on the vehicle, can lock and unlock doors and start vehicles. Autel’s subsidiary brand OTOFIX is about to release a smart watch that enable drivers to unlock and unlock doors and start the ignition while also offer health monitoring features and phone and messaging capabilities.

The “Emergency” Job Begins

My schedule permitted me to go the next day. The safe was located on Longboat Key, a barrier island close to Sarasota, FL, where the condos are big and Mother Nature is a code violation. Seriously, it’s quite beautiful, and most people are able to afford me. Longboat has a few homes as well — some are regular homes, but there are many mega-mansions too. This particular home was a mega-mansion... my kind of customer.

The safe was located on the first floor, but the first floor on barrier islands are about where the second floor is everywhere else. I suppose it’s for safety when we have hurricanes, but it makes installing and removing safes a bit more difficult. It will become clear why that matters later.

The safe lock was an S&G 6120, and it seemed to be working. I could hear the lock retracting. Also, the bolt control handle (captain’s wheel) would turn just a hair further when the lock code was entered. I did not yet have my Phoenix tool or I would have used it to condition the lock and also try a power boost (really cool features the Phoenix has). But, it would not have worked, as the problem was elsewhere. My thinking here was that it was either a fired external relocking device or a malfunction in the boltwork.

The Safe Opens

I did not want to drill outside the keypad on this beautiful safe door, so I went with a malfunction on the boltwork. I did the business card trick to locate a bolt close to the middle of the safe body. I drilled a hole in the side of the safe and got out the punch and hammer. I punched several times with no results, so I started to vary my intensity and speed. I think changing speed worked, as I hit it rapidly. The handle suddenly turned, and the safe was



Figure 7. The full inside view of the door is shown.



Figure 8. This shows the bottom external relocker. The attached cable goes under lock body and ricochets off a top brace before going to the bottom of door. All this routing is done to avoid the cables being tangled in the handle cam, I would guess.

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Figure 9. In this photo, you can see the distance from the opening side of the door to the second external relocking device.



Figure 10. The first external relocking device can be seen.



Figure 11. The length at the top of safe can be seen.

open. There was just a small hole on the side of body to repair... or so I thought.

Locating the Problem

Next, I needed to find out what was wrong. I removed the back cover, and right away, I could see the problem. A

threaded bolt that is used to control the retraction and extension of the bolts had worked loose and dropped in a place that would not allow the bolts to retract. Exactly where that was, I can't tell you, as my hammering on the bolt had dislodged it, so it was lying on the bottom of the

door. The bolt rides in a half-moon track, and the constant hitting of it every time the safe was opened and closed had damaged the threaded plate that it screws into. There was no way to retap to a bigger bolt, as it would not fit in the half-moon track if the bolt were bigger.

I came up with a few ways to fix it, but none that I liked for the long haul. I talked it over with the customer, and we decided I would remove the door and take it to the welder to repair properly. The safe was in a tight closet (aren't they always?), and we would also need to get it across a beautiful marble floor and down the stairs. Then we would have to get it back up and in after the repair. This door was about 300 pounds, so I waited for a safe-moving day when I had help to bring it down. There was no point in me getting hurt or damaging anything. The customer had his passport and was happy for the time being.



Figure 12. In this photo, you can see the bottom of the door and the distance to the bolts. You could use this measurement to punch the bolts back.



Figure 13. The middle of the door is shown.

The welder did a great job of making sure the bolt would not come loose again. We brought the safe door back on the next safe-moving day. It was not easy to put that door back on in that closet, but we did. The customer was pleased with the repairs and tipped us well.

This safe seems to be well built, with the exception of the offending bolt. Also, not all “National” emergencies are taken care of by the government. ☹



Bryan Kruysman, CML, started working on safes and locks in 1974 for his father. He purchased Sun-coast Safe and Lock in Sarasota, FL, in 1991, and

moved to his present location in Venice, FL, in 2006.



Figure 14. You can see the top of the door's measurements.



Figure 15. The door is shown on a hand truck after being removed.

CUSTOMER'S *Choice*



The customer made the wrong product choice,
and **Greg Perry, CML, CPS**, had to rectify it.

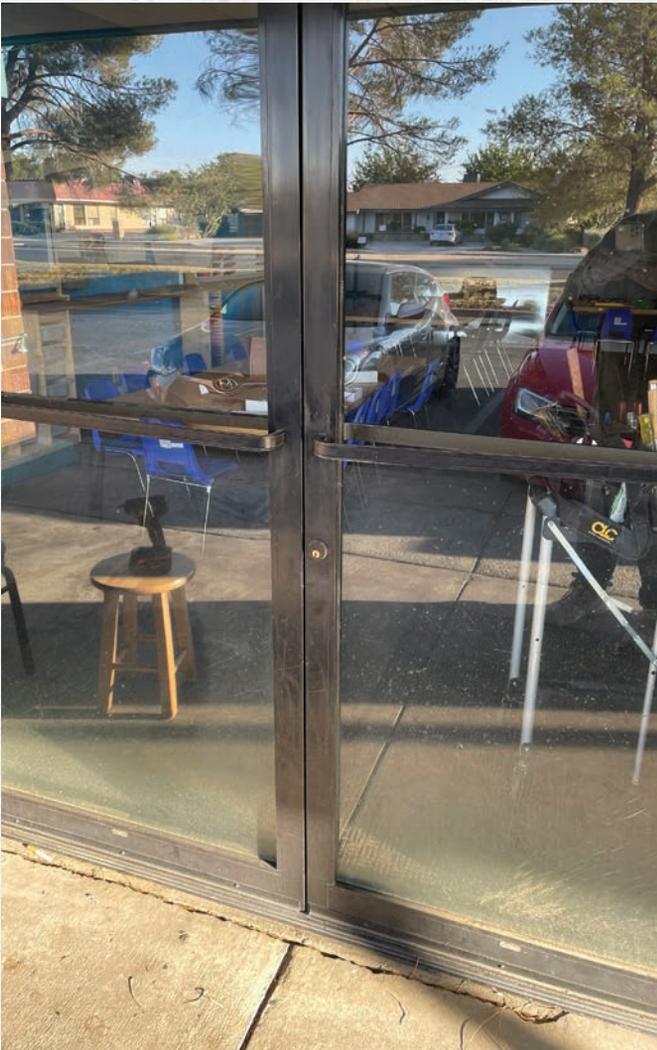


Figure 1. This pair of doors started with an Adams Rite deadbolt.



Figure 2. The swing bolt deadbolt was missing the face plate when the author started giving easy access to the set screws.

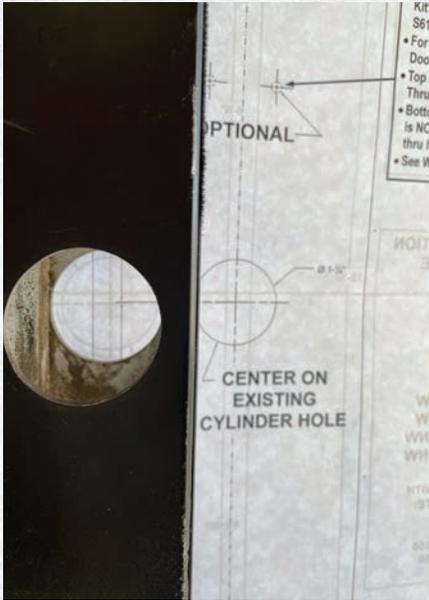


Figure 5. Lining up the template while trying to keep it square to the door is often the most difficult part.

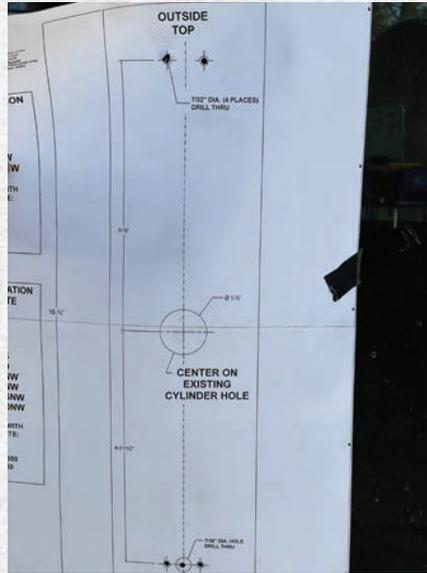


Figure 6. The author likes to center punch through the template and then drill through the paper. This way, you won't accidentally drill the wrong size hole.



Figure 7. Once the holes are drilled, you can install the lock with the cam assembly in the cylinder hole.



Figure 8. The lock comes with two cam assemblies for two different hands. Anyone notice what the author forgot?



Figure 9. The outside assembly is installed; this model is push-button only. Alarm Lock offers it with a proximity card reader. The cylinder below is for key override in case the batteries go dead. The mortise cylinder cam must be ordered from Alarm Lock, as it's not a standard or common cam. The author recommends you order it with an interchangeable core cylinder or order that cylinder separately if Alarm Lock offers the appropriate cam.



Figure 10. After installing the lock and outside trim, the author realized what he was missing: the mounting bolts for the inside paddle. The instructions for the Alarm Lock don't include the inside paddle, or you could use the mortise panic version. The author had to take it back out and line up for these.



Figure 11. The author installed the mounting bolts and then the lock, and he installed the paddle assembly on the inside.

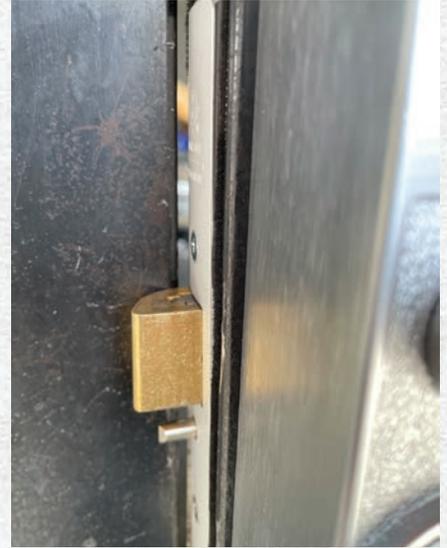


Figure 12. These doors are tight, and the flat of the bolt touches the inactive door. This creates a latching issue. The author adjusted the arms of the door closers on both doors to widen the gap a little.



Figure 13. The strike requires placing the holes dead center on the inactive door. The author likes using calipers. They provide a very accurate measurement, and you can use the sharpened end to scratch or create the mark.



Figure 14. The door is too narrow to support the router or a template. You can use a piece of angle aluminum to provide a wider surface.



Figure 15. This aluminum template from Major Mfg. is marked for both the strike cutout, and you can see the mark for the centerline of the strike on the right side of the photo.

The Installation

The installation starts with removing the swing bolt. The Alarm Lock unit comes with a paper template. I typically prefer a metal template, but since this was a one-off install for me, I used the paper one. The trim requires five additional holes

that need to be placed very accurately. I'll be honest — the hole locations were not perfect, so I had to enlarge them a little. The good news is the trim is much larger than the hole pattern, so the larger holes are covered. The lock was installed, and I moved on to the strike.

The 4901 strike requires a larger cutout in the frame or the door. Getting the cutout correct is difficult without a fixture. Enter Major Mfg. with its HIT-40-AR4. This fixture — combined with the correct guide bushing in a router — provides a perfect cutout in the frame (or, in this



Figure 16. The template is mounted to the door with two screws. These holes are repurposed for mounting the strike support bracket.



Figure 17. Rout the opening slowly. The difficult part is seeing the front face of the door and not cutting through it. Once most of the material is removed, carefully reset the depth of the router bit to just cut away the thickness of the strike as you exit to the front. If the author were to do this again, he would add a spacer to the face of the door to create a gap between the door and his angled aluminum.



Figure 18. After removing the template, the author drilled the template mounting screw holes to the correct size for the mounting bracket screws and then countersunk the holes for the heads. You can see where the face material is left and where he adjusted to cut the face for the strike.



Figure 19. A plastic filler is supplied with the Adams Rite 4901 to fill the bottom hole of the strike. This also allows the strike to be used for either hand.



Figure 20. You can now install the strike in the opening. The author noticed the opening looks a little large in this picture at the top. His guess is that he must have tilted the router slightly as he routed this area. It is slight, as he didn't notice it after he installed the lock. Something he says he could have done to hide this better is to have used a black marker to color the bare aluminum.



Figure 21. Here is the back, or underside, of the strike. The router creates a nice finished edge for the strike to sit against.



Figure 22. This is the final product after the author adjusted the arms on the Jackson concealed overhead door closer to create the additional gap so the door would close and latch properly. The upper push/pull bar mounting hole was filled with a little caulking.

case, the door). It's a two-step process, as the edge opening is cut first, and then the bit needs to be adjusted to cut the thickness of the strike. You should carefully watch the bit so you don't damage or cut the inside face of the frame.

The programming is simple if you're only programming a few codes at the door, and it's similar to the Alarm Lock Trilogy programming. The factory code is 123456. Wait for the green light and then press the A/L button, which puts the lock in programming mode. To change the master code, press the A/L, 1, A/L, new master code, A/L, new master code again and then the * button. Adding a user code is done a little differently: After entering programming, press A/L, 2, A/L,

user number, A/L, user code and then *.

You should also set the day of the week, date and time. The instructions include all of these and the balance of the functions or options available. You also can use this lock trim as a part of the wireless Networkx gateways and computer-based software system.

My total time on the job was longer than I expected: about 4 hours. Accounting for the time it required to take photos and then forgetting to install the paddle, I estimate it should have taken around 2.5 hours. I'd still quote the job as a 4- to 5-hour or half-day project, and it needs to cover the cost of the special templates that speed things up and provide a better-quality project. The customer watched me

work and commented at the end that he was happy to have paid me for my skills. ☺



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.

Minimalist MASTER KEYING *Part 2*

Ralph Forrest-Ball continues his discussion of how to use fewer master pins to make a system more secure.

THE MORE MASTER PINS A LOCK HAS IN IT, THE GREATER THE VULNERABILITY to picking, bumping and key interchange from random outside keys. Master pins sometimes jam up — especially short ones. In part one in the January issue of *Keynotes*, I showed you three examples of master key systems that use very few master pins or none at all. I ended with a puzzle about maison keying, which I'll answer in this article. Then I'll show three proposals for a selective master key system.

Most master-keyed locks only operate with one change key (plus the master or masters above it). A lock that operates with two or more change keys is called “cross keyed.” This is different from key interchange. Cross keying is done on purpose; key interchange is unintentional. Maison keying is an extreme form of cross keying where the goal is to make one lock operate with every key in a large group of keys. It could be an entire building.

The apartment building we discussed in part one has a gate in the back with a lock that's maison-keyed. Unfortunately, filling each chamber with stacks of short master pins makes the lock unreliable. It keeps jamming, so the residents have been propping the gate open.

We convinced the building owners to use single-keyed locks on all the apartments, which means no master pins in the apartment door locks. The beauty of this solution is that we've eliminated the two major problems associated with master keying residences. First, we've eliminated the risk of tenants decoding their own locks to reverse engineer the master key. The locks won't contain any information about the master key at all. Second, we've kept the physical security of the locks themselves intact; they're no more vulnerable to picking or bumping than any other

single-keyed lock. Can we avoid master pins in the gate lock?

A Rare Recommendation

This is one of the rare cases where I'll recommend leaving chambers empty. Doing so will make this lock extremely vulnerable, but it's a low-security situation. There's nothing for anyone to steal. The only reason for the gate is to discourage non-residents from taking a shortcut. All we need is something slightly better than a sign that says “keep out.” To make this work, we'll put bottom pins in the last few chambers of the lock (without master pins) and leave the front chambers empty.

If we plan for this in advance, it really isn't very hard. Suppose the gate key is a Schlage 368534. We put a #3 bottom pin in the fifth chamber and a #4 bottom pin in the sixth chamber. Now all we need to do is make sure that all the apartment keys end with 3 and 4.

The lock on the gate will operate with any key with the right section for that keyway, whose final cuts are 3 and 4. There are $10^4=10,000$ such keys (minus MACS violations, of course).

Normally, in a Schlage master key system, we'd write a KBA like this one:

3 6 8 5 3 4
5 8 0 7 . .
7 0 2 9 . .
9 2 4 1 . .
1 4 6 3 . .
DABCxx

This drops us down from 10,000 to only 256 keys, but it gives us two major benefits: First, all the change keys are at least two steps away from the master key, in every chamber. Second, all the keys are at least two steps away from each other, in at least one chamber. The first doesn't apply to this situation because the gate key isn't really a master key at all. It won't be programmed into any of the locks. In fact, we could include the gate key cuts in the progression possibilities!

3 6 8 5 3 4
3 8 6 5
5 8 0 7 . .
7 0 2 9 . .
9 2 4 1 . .
1 4 6 3 . .
DABCxx

And now we get 625 keys — more than double! I suggest we keep the two-step progression as a precaution to prevent any two apartment keys from being too similar to each other.

What's the downside of leaving cham-

bers empty in the gate lock? There is a significant possibility that some unauthorized person might just have a key in their pocket that ends with 3 and 4, which will open the gate. It's also possible that someone will try to pick the lock, which would be very easy to do. But, if those things happen, is it really so bad? One way to mitigate this problem would be to use an unusual keyway, such as Corbin CO88. Very few people just happen to have CO88 keys in their pockets.

Leaving chambers empty makes a lock less secure than using master pins. But locks with empty chambers are more reliable and less prone to malfunctions than locks with master pins. Leaving more than half the chambers empty is quite unusual and should not be taken lightly. But this is a very low-risk situation.

Suppose the customer approves upgrading the locks and installing CO88 cylinders. Now we just need 30 random keys that end with 3 and 4 and follow parity odd-even-even-odd-odd-even. Watch out for MACS violations, and make sure you don't repeat yourself.

This is a good example to point out the difference between progression and a biting list. Progression gives us all the keys that are available for use in our system. In this example, there are 625 of them (see *Figure 1*), one of which is our gate key. A biting list contains just the keys that have been used. In this example, that's just 30 keys for 30 apartments, and one key for the gate.

Selective Master Keying

Example: Microbrewery. Here is a case where the customer needs four keys to operate various areas of the building. There's one key each for maintenance, sales, quality control and the cleaning crew. The locks are Corbin-Russwin, and we'll use System 70 (depths 1-6, MACS 4).

Here's their keying chart:

door	maint	sales	Q.C.	clean
101	x	x	x	x
102		x		
103	x			x
104A		x		x
104B		x		x
105			x	
106		x	x	x
107	x			

This is not a clear-cut case where one of the keys is called the master. You might say there is no master key — just a bunch of change keys cross-keyed with each other.

How not to do it: An amateur locksmith might be tempted to just use four random keys and drop in whatever pins are necessary to make them work. I've seen this happen many times. In fact, I've seen books that recommend this. But look how it turns out. Suppose we use these four random keys:

maint	231363
sales	322135
Q.C.	115213
clean	154652

Let's write the pinning chart for door 101.

. 2 1 3 1 .
1 1 2 1 2 2
1 1 1 1 2 1
1 1 1 1 1 2

That is a terrible mess, with stacked master pins in every chamber. Stacked master pins are unreliable and should be avoided. Also, we have a total of 16 master pins in just this one lock. A little arithmetic reveals

1. 100134	68. 146534	135. 302934	202. 360334	269. 506734	336. 564134	403. 720534	470. 766934	537. 924334	604. 980734
2. 100334	69. 146734	136. 304134	203. 360534	270. 506934	337. 564334	404. 720734	471. 768134	538. 924534	605. 980934
3. 100534	70. 146934	137. 304334	204. 360734	271. 508134	338. 564534	405. 720934	472. 768334	539. 924734	606. 982134
4. 100734	71. 148134	138. 304534	205. 360934	272. 508334	339. 564734	406. 722134	473. 768534	540. 924934	607. 982334
5. 100934	72. 148334	139. 304734	206. 362134	273. 508534	340. 564934	407. 722334	474. 768734	541. 926134	608. 982534
6. 102134	73. 148534	140. 304934	207. 362334	274. 508734	341. 566134	408. 722534	475. 768934	542. 926334	609. 982734
7. 102334	74. 148734	141. 306134	208. 362534	275. 508934	342. 566334	409. 722734	476. 780134	543. 926534	610. 982934
8. 102534	75. 148934	142. 306334	209. 362734	276. 520134	343. 566534	410. 722934	477. 780334	544. 926734	611. 984134
9. 102734	76. 160134	143. 306534	210. 362934	277. 520334	344. 566734	411. 724134	478. 780534	545. 926934	612. 984334
10. 102934	77. 160334	144. 306734	211. 364134	278. 520534	345. 566934	412. 724334	479. 780734	546. 928134	613. 984534
11. 104134	78. 160534	145. 306934	212. 364334	279. 520734	346. 568134	413. 724534	480. 780934	547. 928334	614. 984734
12. 104334	79. 160734	146. 308134	213. 364534	280. 520934	347. 568334	414. 724734	481. 782134	548. 928534	615. 984934
13. 104534	80. 160934	147. 308334	214. 364734	281. 522134	348. 568534	415. 724934	482. 782334	549. 928734	616. 986134
14. 104734	81. 162134	148. 308534	215. 364934	282. 522334	349. 568734	416. 726134	483. 782534	550. 928934	617. 986334
15. 104934	82. 162334	149. 308734	216. 366134	283. 522534	350. 568934	417. 726334	484. 782734	551. 940134	618. 986534
16. 106134	83. 162534	150. 308934	217. 366334	284. 522734	351. 580134	418. 726534	485. 782934	552. 940334	619. 986734
17. 106334	84. 162734	151. 320134	218. 366534	285. 522934	352. 580334	419. 726734	486. 784134	553. 940534	620. 986934
18. 106534	85. 162934	152. 320334	219. 366734	286. 524134	353. 580534	420. 726934	487. 784334	554. 940734	621. 988134
19. 106734	86. 164134	153. 320534	220. 366934	287. 524334	354. 580734	421. 728134	488. 784534	555. 940934	622. 988334
20. 106934	87. 164334	154. 320734	221. 368134	288. 524534	355. 580934	422. 728334	489. 784734	556. 942134	623. 988534
21. 108134	88. 164534	155. 320934	222. 368334	289. 524734	356. 582134	423. 728534	490. 784934	557. 942334	624. 988734
22. 108334	89. 164734	156. 322134	223. 368534	290. 524934	357. 582334	424. 728734	491. 786134	558. 942534	625. 988934
23. 108534	90. 164934	157. 322334	224. 368734	291. 526134	358. 582534	425. 728934	492. 786334	559. 942734	
24. 108734	91. 166134	158. 322534	225. 368934	292. 526334	359. 582734	426. 740134	493. 786534	560. 942934	
25. 108934	92. 166334	159. 322734	226. 380134	293. 526534	360. 582934	427. 740334	494. 786734	561. 944134	
26. 120134	93. 166534	160. 322934	227. 380334	294. 526734	361. 584134	428. 740534	495. 786934	562. 944334	
27. 120334	94. 166734	161. 324134	228. 380534	295. 526934	362. 584334	429. 740734	496. 788134	563. 944534	
28. 120534	95. 166934	162. 324334	229. 380734	296. 528134	363. 584534	430. 740934	497. 788334	564. 944734	
29. 120734	96. 168134	163. 324534	230. 380934	297. 528334	364. 584734	431. 742134	498. 788534	565. 944934	
30. 120934	97. 168334	164. 324734	231. 382134	298. 528534	365. 584934	432. 742334	499. 788734	566. 946134	
31. 122134	98. 168534	165. 324934	232. 382334	299. 528734	366. 586134	433. 742534	500. 788934	567. 946334	
32. 122334	99. 168734	166. 326134	233. 382534	300. 528934	367. 586334	434. 742734	501. 900134	568. 946534	
33. 122534	100. 168934	167. 326334	234. 382734	301. 540134	368. 586534	435. 742934	502. 900334	569. 946734	
34. 122734	101. 180134	168. 326534	235. 382934	302. 540334	369. 586734	436. 744134	503. 900534	570. 946934	
35. 122934	102. 180334	169. 326734	236. 384134	303. 540534	370. 586934	437. 744334	504. 900734	571. 948134	
36. 124134	103. 180534	170. 326934	237. 384334	304. 540734	371. 588134	438. 744534	505. 900934	572. 948334	
37. 124334	104. 180734	171. 328134	238. 384534	305. 540934	372. 588334	439. 744734	506. 902134	573. 948534	
38. 124534	105. 180934	172. 328334	239. 384734	306. 542134	373. 588534	440. 744934	507. 902334	574. 948734	
39. 124734	106. 182134	173. 328534	240. 384934	307. 542334	374. 588734	441. 746134	508. 902534	575. 948934	
40. 124934	107. 182334	174. 328734	241. 386134	308. 542534	375. 588934	442. 746334	509. 902734	576. 960134	
41. 126134	108. 182534	175. 328934	242. 386334	309. 542734	376. 700134	443. 746534	510. 902934	577. 960334	
42. 126334	109. 182734	176. 340134	243. 386534	310. 542934	377. 700334	444. 746734	511. 904134	578. 960534	
43. 126534	110. 182934	177. 340334	244. 386734	311. 544134	378. 700534	445. 746934	512. 904334	579. 960734	
44. 126734	111. 184134	178. 340534	245. 386934	312. 544334	379. 700734	446. 748134	513. 904534	580. 960934	
45. 126934	112. 184334	179. 340734	246. 388134	313. 544534	380. 700934	447. 748334	514. 904734	581. 962134	
46. 128134	113. 184534	180. 340934	247. 388334	314. 544734	381. 702134	448. 748534	515. 904934	582. 962334	
47. 128334	114. 184734	181. 342134	248. 388534	315. 544934	382. 702334	449. 748734	516. 906134	583. 962534	
48. 128534	115. 184934	182. 342334	249. 388734	316. 546134	383. 702534	450. 748934	517. 906334	584. 962734	
49. 128734	116. 186134	183. 342534	250. 388934	317. 546334	384. 702734	451. 760134	518. 906534	585. 962934	
50. 128934	117. 186334	184. 342734	251. 500134	318. 546534	385. 702934	452. 760334	519. 906734	586. 964134	
51. 140134	118. 186534	185. 342934	252. 500334	319. 546734	386. 704134	453. 760534	520. 906934	587. 964334	
52. 140334	119. 186734	186. 344134	253. 500534	320. 546934	387. 704334	454. 760734	521. 908134	588. 964534	
53. 140534	120. 186934	187. 344334	254. 500734	321. 548134	388. 704534	455. 760934	522. 908334	589. 964734	
54. 140734	121. 188134	188. 344534	255. 500934	322. 548334	389. 704734	456. 762134	523. 908534	590. 964934	
55. 140934	122. 188334	189. 344734	256. 502134	323. 548534	390. 704934	457. 762334	524. 908734	591. 966134	
56. 142134	123. 188534	190. 344934	257. 502334	324. 548734	391. 706134	458. 762534	525. 908934	592. 966334	
57. 142334	124. 188734	191. 346134	258. 502534	325. 548934	392. 706334	459. 762734	526. 920134	593. 966534	
58. 142534	125. 188934	192. 346334	259. 502734	326. 560134	393. 706534	460. 762934	527. 920334	594. 966734	
59. 142734	126. 300134	193. 346534	260. 502934	327. 560334	394. 706734	461. 764134	528. 920534	595. 966934	
60. 142934	127. 300334	194. 346734	261. 504134	328. 560534	395. 706934	462. 764334	529. 920734	596. 968134	
61. 144134	128. 300534	195. 346934	262. 504334	329. 560734	396. 708134	463. 764534	530. 920934	597. 968334	
62. 144334	129. 300734	196. 348134	263. 504534	330. 560934	397. 708334	464. 764734	531. 922134	598. 968534	
63. 144534	130. 300934	197. 348334	264. 504734	331. 562134	398. 708534	465. 764934	532. 922334	599. 968734	
64. 144734	131. 302134	198. 348534	265. 504934	332. 562334	399. 708734	466. 766134	533. 922534	600. 968934	
65. 144934	132. 302334	199. 348734	266. 506134	333. 562534	400. 708934	467. 766334	534. 922734	601. 980134	
66. 146134	133. 302534	200. 348934	267. 506334	334. 562734	401. 720134	468. 766534	535. 922934	602. 980334	
67. 146334	134. 302734	201. 360134	268. 506534	335. 562934	402. 720334	469. 766734	536. 924134	603. 980534	

Figure 1. There are 625 available keys (MACS violations marked in red).

that there are $3 \times 4 \times 4 \times 4 \times 4 \times 3 = 2,304$ keys that operate this lock. A random key has about 1-in-7 chance of operating this lock. That's horrendous. The other locks have 29 master pins between them for a grand total of 45 master pins in eight locks.

We can do a lot better with a technique called selective master keying. One way to visualize this is that we are making a rotating constant system, with just one progressed chamber and the other five constant. There are six ways to rotate the constants and, with single-step progression, each rotation yields up to five keys. That's 31 keys including the master, and we only need four.

We need to make a decision: We can either choose one of the keys from the grid to designate as the master key, or we can create a theoretical master key that will exist only on paper. The theoretical option gives maximum flexibility, but the designated option may use fewer master pins. However, there is a possibility that the customer will require a combination that the designated master option can't provide. Let's start with the theoretical master key option, for maximum flexibility.

Option A: Theoretical Master Key

I choose 345621 for our theoretical master key. We won't actually cut this key; it's just an anchor point from which we calculate the others. Now make a KBA.

3	4	5	6	2	1
4	5	6	1	3	2
5	6	1	2	4	3
6	1	2	3	5	4
1	2	3	4	6	5
2	3	4	5	1	6
A	B	C	D	E	F

Instead of progressing all six columns to get 15,625 change keys, we only progress one column at a time. Here's the progression list, with progressed cuts highlighted in blue:

- 345621 TMK
- 445621
- 545621
- 645621
- 145621
- 245621
- 355621
- 365621
- 315621
- 325621
- 335621
- 346621
- 341621(MACS)
- 342621
- 343621
- 344621
- 345121
- 345221
- 345321
- 345421
- 345521
- 345631
- 345641
- 345651
- 345661(MACS)
- 345611(MACS)
- 345622
- 345623
- 345624
- 345625
- 345626

Three of them are MACS violations. We can pick our four keys from anywhere in the list. But, if we pick two keys that are progressed in the same position and there's a lock that uses both of those keys plus a third one, we'll end up with stacked master pins. If we choose each key progressed in a different position, we'll never have stacked master pins. Here are my

choices for our four keys: I choose the following keys from the list, each of which are two steps away from the theoretical master, so we only use #2 master pins.

maint	545621
sales	365621
Q.C.	343621
clean	345421

You might notice that all of the ones I chose are two steps away from the theoretical master, so we'll only use #2 master pins. We won't have stacked master pins anywhere. In fact, locks 102, 105 and 107 will have no master pins at all; they are single-keyed. The lock with the most master pins is 101, which has four master pins: one in each of the first four chambers. All the others have two or three master pins. Altogether, our eight locks have a total of 13 master pins.

That's very good. But I think we can do better.

Option B: Designated Master Key

Suppose we designate the maintenance key as the master key. We'll call it AA. Let's call the sales key 1AA, the quality control key 2AA and the cleaning crew key 3AA. Now we have a more conventional keying schedule:

door	keying
101	X1X
102	1AA(NMK)
103	3AA
104A	X2X
104B	X2X
105	2AA(NMK)
106	X3X
107	AA

X1X is operated by all keys.

X2X is operated by 1AA, 3AA (but not AA).

X3X is operated by 1AA, 2AA and 3AA (but not AA).

We'll use the same progression list as before. But, this time, we actually will use the TMK as a key. It's our maintenance key. The other keys can stay the same. Here is the bitting list:

maint	345621 AA
sales	365621 1AA
Q.C.	343621 2AA
clean	345421 3AA

Let's write the pinning charts for X1X and X2X.

X1X	. 2 2 2 . .	X2X	. 2 . 2 . .
	343212		343421

This looks wonderful. X1X is a lock pinned to four different keys with only three master pins, and none of them stacked. Doors 102, 105 and 107 are single-keyed locks; they don't need any master pins at all. Of the remaining doors, 103 has exactly one master pin, 104A and 104B have two master pins, and 106 has three. We've gotten the total number of master pins down from 13 to just 11. But take a closer look at the pinning chart for X2X. Uh-oh: The 345621 key operates, even though it's not supposed to. This is internal key interchange.

The problem stems from the fact that there's a lock in our keying chart that is operated by more than one key but not the designated master key. It needs to be cross keyed and NMK at the same time, which tends to cause problems with selective master keys from different columns of the KBA. Option A was immune to this problem because the TMK itself was not in use.

The problem might go away if we picked a different key to designate as the master. Let's designate the cleaning crew key as the master. To avoid confusing it with the system above, we'll call this alternate system BB. Look at each of the doors where the BB key does not operate. In those cases, the lock has only one key. This will work. Below are our bitting list, keying schedule and pinning charts:

maint	545621 1BB
sales	365621 2BB
Q.C.	343621 3BB
clean	345621 BB

door	keying
101	X1X
102	2BB(NMK)
103	1BB
104A	2BB
104B	2BB
105	3BB(NMK)
106	X2X
107	1BB(NMK)

X1X is operated by all keys.

X2X is opened by 2BB, 3BB and BB.

“Progression gives us all the keys that are available for use in our system.”

X1X	2 2 2 . .	X2X	. 2 2 . .
	343212		343421

We've got our master pins down to just eight pins in eight locks. That's amazing. And there's no key interchange here. The BB master operates everywhere except 102, 105 and 107, each of which are single-keyed locks. However, we still run the risk that, at some later date, the customer will require a lock that operates with the sales key and the QC key but not the cleaning key, for example. That would be impossible with these bittings.

However, if we knew in advance that this would happen, there's a way to accommodate it. We would take the two crossed keys from the same column of the KBA. That eliminates the key interchange, but it stacks the master pins.

If you are eager to put your master keying skills to good use, you may find some situations like those listed here where you can use very few master pins, or even none at all. ☺



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From 2009 to 2019, he was the owner of Emerald City Locksmith in Eugene, OR, and he was the winner of ALOA's Best Shop contest in 2011. He is currently working as an instructor and an author in Corvallis, Oregon.

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Seeing Double

James K. Ashley, CMST, CPL, CEL, CAI, CFL, explains why having two readers for one door is beneficial.

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HEN DESIGNING AN ACCESS CONTROL SYSTEM, ONE OF THE main questions we ask is, “How much information do you want your system to provide in reports?” Nearly all systems have an option to enable “anti-passback.” It may not be front and center in the programming sequence, and you may have to dig to find it, but it’s probably there. It can be useful to an end user.

What Is Anti-Passback?

The basic idea came from unscrupulous employees who “covered” for a friend or colleague. One person would gain access with a valid credential and then pass the credential back to an unauthorized user through a window or fence/gate. That way, the second person could use that same credential to gain access.

This can give the end user an important employee management tool because it can provide information about how many people are in a particular area and their identities.

Anti-passback is accomplished by installing two readers: one on the exterior used to gain access, and another for exiting on the egress side of that same door. The access system registers when someone enters or exits the building.

“Anti-passback is accomplished by installing two readers: one on the exterior used to gain access, and another for exiting on the egress side of that same door.”



So, if someone uses a credential to gain access and “passes back” his or her credential to an unauthorized user, the second person will not be granted access because the system thinks the first person is still in the building. If this feature is enabled, it will show up as an “anti-pass-back violation.” The system can usually be programmed to send a notification when this occurs so that security personnel can address the violation.

This also begs for consideration of biometric readers at high-security doors, such as server rooms and telecom closets. You can’t “pass back” a fingerprint.

If there’s a CCTV system integrated with the access control system, there will be video of the unauthorized user who tried using the credential. Based on this evidence, they can also have a conversation with the user who was issued the credential to find out how the credential was transferred.

Planning and Benefits

One thing to note during planning and system design is foot traffic patterns: Staff must exit at a door with an egress reader. If they exit through a door with a rex, it will show up in the history as a valid exit but not keep track of *who* exited. The next time the person tries to gain access, the anti-passback logic will deny the attempt

“Another important benefit to having two readers is the ability to use the information for time and attendance.”

to enter. This seldom happens more than once because the person must beg “forgiveness” and have the system operator reset the credential.

Another important benefit to having two readers is the ability to use the information for time and attendance. This may eliminate the need for an actual time clock.

What about fire drills? If this is a concern, be sure to make an allowance for “forgiveness” and program the system accordingly. What about a real emergency such as a mass exodus? You don’t want a bottleneck created by people having to scan their badge to exit in an emergency. Taking this into consideration, you can see why there needs to be some accommodation.

Another benefit to having two readers at a strategic entrance is known as a “mustering” report. This feature is found on more robust enterprise-level systems and is used for locations such as chemical plants, oil refineries or other high-risk areas.

You can program the system to provide this report based on egress readers as well as have a single reader at a mustering point. If people need to exit an area in a hurry, they can assemble at a safe check-in point and present their credentials. This allows the system to differentiate between employees who have not checked in at the mustering point from those who are not in the building for other reasons. ☺



James K. Ashley, CMST, CPL, CEL, CAI, CFL, started in the security industry in 1986 while stationed at Lackland Air Force Base in San Antonio, TX, volunteering as an apprentice for B&P Lock Shop. James is an educational sponge, and being a musician is the only thing that can eclipse his love for electronics and technology... and boating. He started Ashley Safe & Security in 2001 in Indianapolis, IN, and is three-term president of the Associated Locksmiths of Indiana.

ADAPTION, REVISION and Change

Making small changes can produce big impacts on your operations and bottom line. **By Rick Karas, RL, CFI, AFDI**

EVERY SUCCESS STORY IS A TALE of constant adaption, revision and change. A company that stands still will soon be forgotten.”

— Richard Branson

I must say that Richard Branson hit the nail on the head with that one. One thing is certainly true and that is that the world is always changing, and adaptability is a must. Unfortunately, since COVID-19 arrived, we live in a world that requires face masks, hand sanitizers and keeping your distance and guard up for anybody who sneezes or coughs (talk about being on pins and needles all day). To survive, we must adapt. One such adaptation is keeping your distance from others and limiting your time with them as much as possible. However, as locksmiths and security professionals, we are in contact with people constantly; it's just part of the job. The challenge that we face is adapting our usual way of doing things to limit the time or amount of contact that we have with our clients/customers.

The Situation

Working in a large metropolitan area, we have quite a lot of office buildings. The demand for keys in those building is an ongoing event. Office keys, cabinet key, desk keys — you name it, and the demand is there. Here's a typical scenario: You arrive at the office building. Hopefully, it's your lucky day and you found parking close to the building that you'll be working in. You put your PPE on (face mask, gloves, etc.) and enter the building. You are greeted by a security guard or concierge (first contact). You are then asked to check in at the front desk (second contact). Your temperature is taken (third contact). You need to take the elevator to the floor that you will be working on, and, of course, there will always be somebody in the elevator with you (fourth contact). You arrive on the floor that you are working on and meet your point of contact for the work (fifth contact). By this time, you have made close contact with five people you don't know, not to mention all the other peo-

ple passing by in the lobby or hallways.

To complete your task, you need to make some keys, so back down through the building and out to your service vehicle you go. You have likely encountered more people exiting the building, plus additional people on the sidewalk on the way to your service vehicle. Then, once the keys are made, it's time to go back up and test and deliver the keys and then back down to your service vehicle when the job is done — encountering even more people along the way.

I got to thinking about this and thought, “How can I adapt and change to limit my exposure when doing these types of jobs and be more efficient? I need a revision, a new or different way to do business in this new environment. But how? What could I do differently?” I was used to my old way of doing things, and those ways always worked, and I felt comfortable with them. Do I still? Not so much, given the current pandemic. I knew that I had to figure out a way to be more efficient so that I would only have

to enter a building once. No more back and forth. Not only would this limit my exposure to people and health risks, it would also reduce the amount of time on the job, hopefully making me more productive and, in turn, more profitable.

My Solution

I decided that I needed to be able to bring everything with me in one trip when making keys for my corporate clients. To do this, I would need a traveling mobile key machine kit that would contain everything that I would need to get my jobs done in a single trip. My first thought was thinking back to my Foley Belsaw machine that I got 30 years ago. I used to take that machine with me everywhere. Was this a bad idea? After all, I ditched toting that machine around with me years ago. Was I ready to go full circle back to a mobile key machine? I thought about it and decided that I would give it a try.

Since making a traveling mobile key machine kit was an experiment, I decided that I would try to do this on a budget using things that I already had.

A Container

I needed a sturdy, stackable, strong container or box to put everything in. I wanted something that did not have a handle that would stick out from the sides or the top. This way, if I needed to stack it onto something, I would be able to do so without a handle getting in the way. Luckily for me, I had an old toolbox that fit that description (see *Figure 1*).

A Key Machine

A while back, I bought a second-hand micrometric machine. I don't know why I bought it; I just did (*Figure 2*). I never used it. It was just sitting under the bottom of one of my workbenches collecting dust. You know the saying: "I better keep that. I may need it one



Figure 1. The author used an old toolbox to put everything in.



Figure 2. The author had a second-hand micrometric machine collecting dust.

day!" Yep, I am from that school, and I admit that I have a lot of those items! If you've ever used a tiny key machine like this one, you know that they are small and lightweight — perfect for a mobile

operation. However, its light weight is both a pro and con. The drawback is that its featherlight weight means it tends to move. It slides and moves back on a table or bench when making a key. Therefore,



Figure 3. The author sprayed the bottom of the OSB with Plasti Dip.

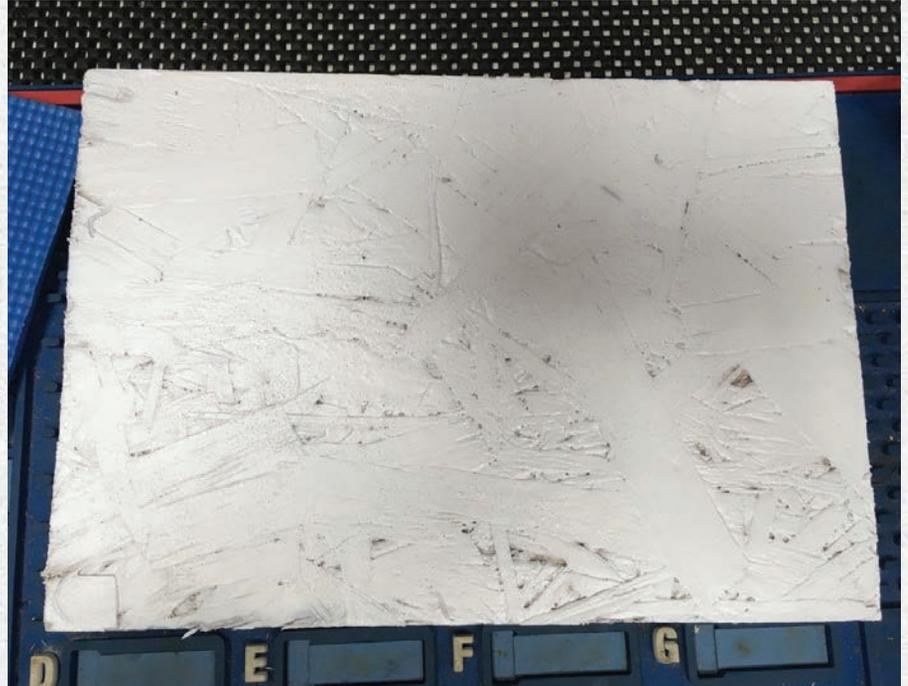


Figure 4. The Plasti Dip did not work very well.

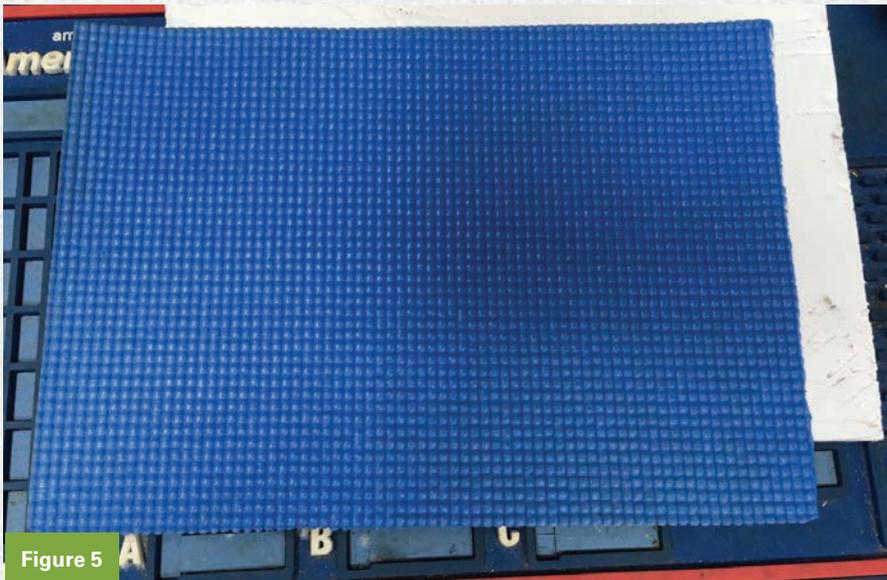


Figure 5



Figure 6

Figures 5 and 6. A piece of this exercise mat (*Figure 5*) was affixed to the OSB with contact adhesive (*Figure 6*).

it usually must be fastened to a table with screws, bolts or a clamp. I knew that I would not be able to fasten it down to a client's furniture without the risk of leaving some sort of a mark. I certainly did not want the machine sliding around on any of my client's furniture and accidentally scratching it. Not to

mention the annoyance of making a key while the key machine is moving. I knew that this was not going to work without addressing the situation. The following is my solution.

I had to decide where the key machine was going to be in the toolbox. I wanted the key machine in the center so it would

be protected and not slide around and get knocked out of calibration. The last thing I wanted to do was recalibrate the machine on the job site.

I took a measurement from the middle of the toolbox that would become the base of the key machine. I used that measurement and subtracted $\frac{1}{8}$ " from both sides



Figure 7



Figure 8

Figures 7 and 8. The adhesive was applied to both the OSB and the mat.



Figure 9. The author sprayed both sides of the OSB.



Figure 10. This piece of laminate flooring was affixed to one side of the workout mat.

and cut out a piece of oriented strand board (OSB) that I had laying around. OSB is engineered wood that is similar to particle board. I would have preferred a piece of solid wood, but the piece of OSB was already in my shop. I decided to use it since this project was an experiment, and I wanted to budget accordingly.

Knowing that the machine would need to stay in one place and not move when I cut keys, I decided that I needed something on the bottom of the OSB that would grip to the surface of a table and be tacky enough for the key machine not to move and slide back when I used it. I sprayed the bottom of the OSB with Plasti Dip (Figure 3). I did this because, again, it's what I had in my shop. However, after a couple

of coats of the Plasti Dip, I was not happy with the result, as it did not work very well (Figure 4). It probably would have worked if I had used a piece of solid wood. I was concerned that the OSB would also start to chip away after a while.

Plan B

So, I abandoned the idea of the Plasti Dip and had to come up with another plan. I had an exercise mat (Figure 5) that I had used for physical therapy (PT) after an auto accident a while back. I remembered that the mat never seemed to move. If the mat didn't move when I used it for PT, then it should work pretty well for my little key machine.

I cut off a little bit of the end of the mat

and affixed it to my OSB with contact adhesive. Figure 6 shows the adhesive, and Figures 7 and 8 show the adhesive applied to both the OSB and the mat. I sprayed both sides of the OSB (Figure 9). This gave the bottom of the base the grip that I was looking for so that the tiny key machine would not slide back when I cut keys. I cut an additional piece of the mat and affixed it to the other side to act like a little shock absorber that would hopefully protect my machine when it bounced around in the toolbox.

I then took an old piece of laminate flooring (Figure 10) and affixed it to one side of the workout mat with the contact adhesive. This would be the top side. The piece of laminate was very smooth and



Figure 11. The laminate and the mat are shown prior to being sprayed with the contact adhesive.

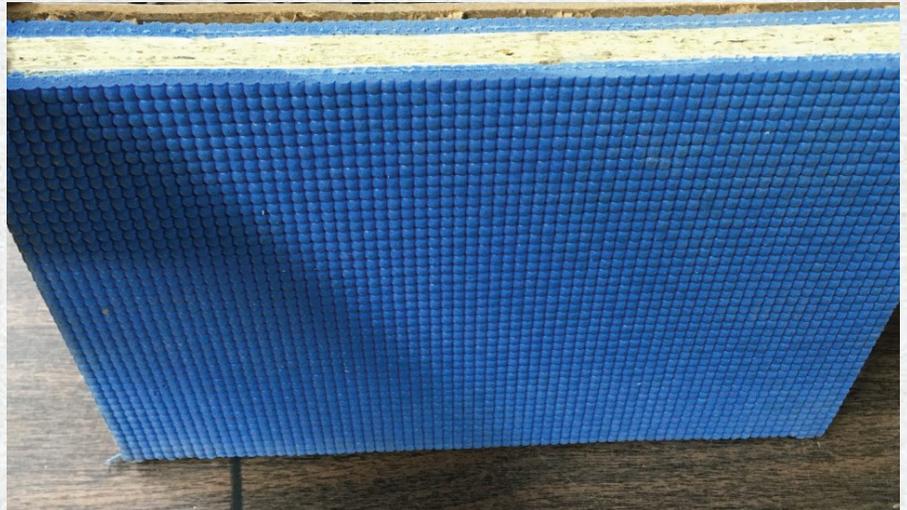


Figure 12. The edges are now clean.

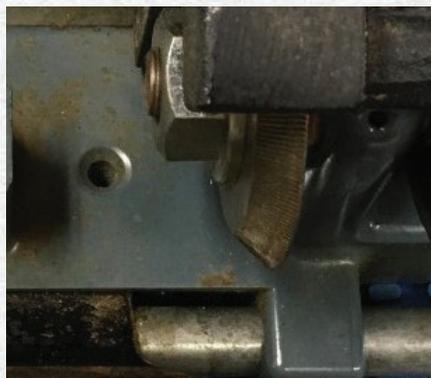


Figure 13. The cutter had been installed in the wrong direction.



Figure 16. This is the old cutter wheel.



Figure 14



Figure 15

Figures 14 and 15. The old belt was a little sketchy (*Figure 14*), so the author installed a new one (*Figure 15*).

would allow me to brush away any shavings the key machine produces when I cut keys. *Figure 11* shows the laminate and the mat prior to applying the contact adhesive. Once I had all the pieces attached together with the adhesive, I cleaned up the edges and trimmed my newly made base with a miter saw to produce nice clean edges (*Figure 12*).

Next, I installed a new cutting wheel on the machine. If you look closely at

Figure 13, you'll notice that the cutter had been installed in the wrong direction. I had never noticed it because I had never used the machine before. I also installed a new belt because the old one was a little sketchy. *Figure 14* shows the old belt. *Figure 15* shows the new belt that I used. After installing the new cutter wheel and belt, I adjusted everything and made a few test keys. The machine worked like a champ.



Figure 17

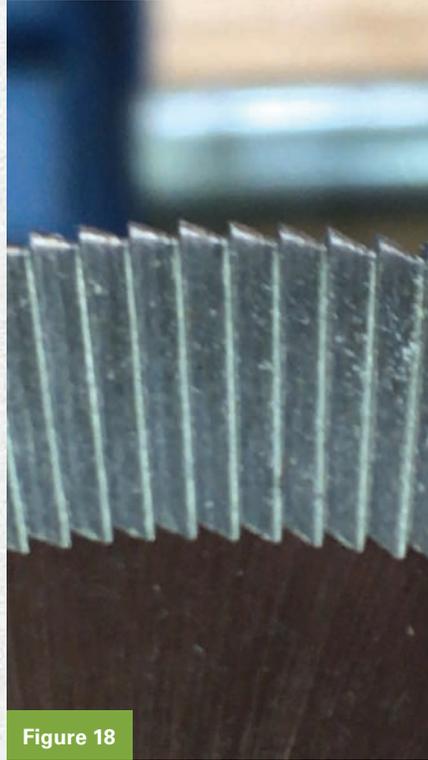


Figure 18

Figures 17 and 18. The new cutter wheel was in better shape.

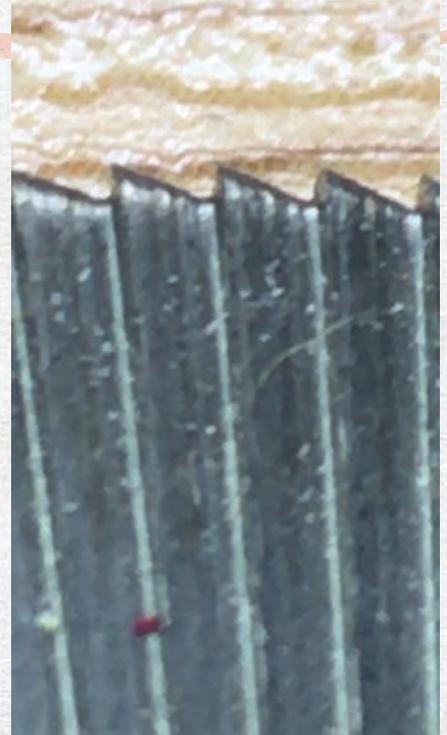


Figure 19. This image provides a close-up view of the new cutter.

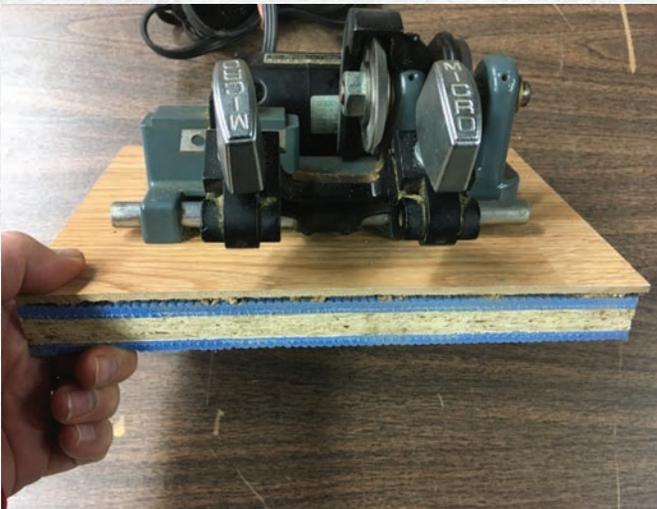


Figure 20. The author attached the key machine to the base.



Figure 21. A couple of side panels made from some of the leftover laminate flooring help isolate the key blanks away from the key machine.

I know you are probably wondering what the old cutter wheel looked like. It was pretty beat up. *Figure 16* shows the old cutter wheel, and *Figures 17* and *18* show the new one. I took a photo at 10x magnification to show a close-up view of the new cutter (*Figure 19*). If you take a close look at the photos of

the old and new wheels, you'll see that there is a clear difference.

Attaching the Key Machine

Next, I attached the key machine to the base that I had just made (*Figure 20*). I decided to make a couple of side panels from some of the leftover laminate flooring

so that I could isolate my key blanks away from the key machine (*Figure 21*). This allowed everything to fit snugly.

I figured out what key blanks, setup keys, code keys, GAK rings and miscellaneous items I would more than likely need. I was amazed at what I was able to put in the mobile key machine kit. *Figure*



Figure 22. Here is everything that went into the traveling key machine kit.

22 shows everything that went into my traveling key machine kit. Here is a list of what exactly it contains:

- One key machine
- 19 boxes of key blanks
- Two plastic storage boxes measuring 10½" x 7". The boxes each have 18 compartments each.
- 10 plastic storage boxes measuring 6¾" x 4½"
- One paintbrush.

Figures 23-26 show how I was able to pack everything into the toolbox.

All in all, I was happy with how this turned out. I will say that the entire kit is a bit heavier than I expected. However, I use a cart when doing my commercial jobs, so I don't intend to carry this. I'll just place it on my cart and go. I am sure there will be things that I tweak and modify over time, but for now, it works out just fine.

I feel better knowing that not only did

“IF MAKING JUST A LITTLE CHANGE AND ADAPTING TO A NEW SITUATION LIKE MINE CAN MAKE A HUGE DIFFERENCE, THEN OTHER CHANGES AND ADAPTATIONS CAN HAVE HUGE POSITIVE OUTCOMES, TOO.”

I reduce the number of times that I encounter people, but I also reduced my overall service time. It's a triple win for me and an overall success. I can use the time I am saving for other jobs and make more money. Making the mobile kit on a budget was a plus.

In the end, I would have to agree with Richard Branson and say that this is a success story that is about adaption, revision and change. I am glad I took a little time to experiment on a way to adapt to new challenges.

This article focused on my adaptation of my way of doing business so that I would reduce how many people I would encounter because of the pandemic. I not only accomplished that goal, but the adaptation had the additional benefit of more on-the-job efficiency. The takeaway from this article is not meant to be that everyone should build a mobile key machine kit. The point is that we



Figure 23



Figure 24



Figure 25



Figure 26

Figures 23-26. These photos show how everything is packed into the toolbox.

must constantly learn to adapt to new environments and situations. I wanted to demonstrate how just a simple little change like my traveling key-making kit can have a huge impact. If making just a little change and adapting to a new situation like mine can make a huge difference, then other changes and adaptations can have huge positive outcomes, too. There are no two locksmith shops that are identical. They all have unique characteristics. That's one

of the things that makes our industry so awesome. A little adaptation, revision and change can have huge rewards in the end.

Note: At the time of this article was written, COVID-19 was at its height. Since then, a vaccine has been developed and is widely available to the public. Even when we go back to "normal," I think that I will still use my mobile kit because it both saves me time and makes me more money. 🤝



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



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)

- | | | |
|--|--|---|
| <input type="checkbox"/> Locksmith Owner | <input type="checkbox"/> Automotive | <input type="checkbox"/> Employee Technician |
| <input type="checkbox"/> Electronic Security | <input type="checkbox"/> Security Professional | <input type="checkbox"/> Mechanical Door Locks & Hardware |
| <input type="checkbox"/> Institutional | <input type="checkbox"/> Safes | <input type="checkbox"/> Investigative |
| <input type="checkbox"/> 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 \$265 I elect to Go Green \$235
- International \$275 I elect to Go Green \$205

International Association of Investigative Locksmiths Membership

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

- US and US Territories \$55

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

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- International \$275 I elect to Go Green \$205

Probationary Membership – No Sponsorship Required

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- US and US Territories \$265 I elect to Go Green \$235
- International \$275 I elect to Go Green \$205

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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 \$265 I elect to Go Green \$235
- International \$275 I elect to Go Green \$205

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 _____

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“I Thought It Would Be Easy...”

Sometimes a would-be simple job turns out to be a bit more difficult than expected. **By Tony Wiersielis, CPL, CFDI**

IN MY NOVEMBER ARTICLE TITLED “NO SHARP OR Pointed Objects,” I told you about some failing, abused mortise panic bars in one of the dorm buildings in that unnamed college in Manhattan. I’ve since replaced them all, but I ran into a glitch that made me return to finish them.

In the same article, I also showed you pictures of closers installed backward in another building. I don’t know if the

original contractor came back and corrected it, but somebody redid the closers so they actually work and have all their parts.

Back to the dorm panic bars. *Figure 1* shows the filler plate I used in the mortise cutout. *Figure 2* shows the filler for the old strike. Both of these plates are in the Don-Jo FPK-86 filler plate kit, along with the necessary screws to install them. This kit is handy to keep in your shop or on your truck.



Figure 1. The author used this filler in the mortise cutout.



Figure 2. This is the filler for the old strike.



Figure 3. These two large through holes are remnants of the old mortise panic bar.



Figure 4. The outside (or stairwell side) passage trim is shown.



Figure 5. This is one of the three plates the author made for the inside holes.

I'm not going through the installation step by step, as it's basically the same as a standard installation except for the fillers. I ran into one issue that you can see in *Figure 3*. Those two large through holes are remnants of the old mortise panic bar. *Figure 4* shows the outside (or stairwell side) passage trim. It's large enough to hide the old holes.

When I drew my vertical and horizontal center lines and taped on the template, I held the outside trim up to it. I was happy to see that the trim would cover the holes but, in a senior moment, I forgot that the head of the bar isn't the same size as the trim.

I decided to install all three bars and come back another day with push plates to cover the exposed holes on the inside of the door. This decision had a lot to do with the fact that I pushed a cart with my tools and three heavy panic bars for four city blocks to get to this building. I really didn't feel like dragging two of the bars back to my shop and then back again another day.

Figure 5 shows one of the three plates I made for the inside holes. *Figure 6* shows my large hemostat clamped on the finger lift of the trim, holding the trim against the outside of the door. I did this so I could start the screws that go through the head of the bar and into the trim. The trim tends to fall out if you don't hold it against the door. At the same time you're holding it, you have to hold up the panic bar and line it up with the holes. To then start the screws is a juggling act. I do not keep my Panic Strapp at the college shop, as I rarely do panic bars there. That definitely would have made things easier.



Figure 6. The large hemostat is clamped on the finger lift of the trim, holding the trim against the outside of the door.



Figure 7. The finger lift is circled. The blue arrow points to the bottom jaw of the hemostat.



Figure 8. The modified strike is in the prep.



Figure 9. Now there is a clear spot to drill a new bottom hole..

You can't see the finger lift in *Figure 6*, so I circled it in red in *Figure 7*. The blue arrow points to the bottom jaw of the hemostat. After this, it's just a matter of starting the screws and tightening them until I get close to the hemostat. Then I release it and finish tightening the screws.

Here's a tidbit about this tool, which is used to clamp blood vessels during surgery: The "hemo" part of the name refers to blood. It's also known as a forceps. The one you see was less than \$6 at Harbor Freight.

The Famous ST-134 Again

I was once again at the same college, and this time at a huge dorm on 1st Ave. I replaced some very old mortise passage sets with 9K storeroom function locks and wrap-around plates. This was to stop the students from getting into the basement parking areas. One of the security guards had found a group of them playing soccer down there. Whatever.

The wraps and the 9Ks were relatively easy, as you'll see toward the end, but one of the strikes was an odd size — and missing. Another surprise... imagine that. Once again, I had to return on another trip with some kind of answer in hand. I traced an outline of the existing strike prep and brought it back to the shop.

I had an extra Don-Jo 134. It kind of fit but was a little small height-wise, and the curved lip of the strike was a lot larger than the prep. I whipped out my trusty RIDGID one-hand reciprocating saw to cut it down. The trouble was that it was stainless and not plated brass. Even with cobalt blades, it was really slow-going to the point that other important things weren't getting done.

I was returning the next day, so I picked up another Milwaukee Dremel-type tool to leave at the shop. I did this because I park my truck in Jersey City and take a train into Manhattan. I'll use the tool there once in a while, but most of you realize that when you need to use that tool, there's nothing else that's going to work.

Figure 8 shows the modified strike in the prep. The holes don't match up very well. Since this was one of those out-of-the-way doors that nobody sees, I had a little leeway with what I was doing. I brought the tool with me and cut some more off the bottom of the lip. In *Figure 9*, you can see a place for me to drill and tap a new bottom hole. The threaded hole in the top is now more usable than it was.

In *Figure 10*, I'm using a Klein Tools Multi Tap Bit screwdriver to tap the bottom hole for 12-24. *Figures 11* and *12* show the double-sided tap bit and how the sizes are laid out. There are



Figure 10. The author is using a Klein Tools Multi Tap Bit screwdriver to tap the bottom hole for 12-24.



Figure 11

Figures 11 and 12. You can see the double-sided tap bit and how the sizes are laid out.



Figure 12



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Figure 13. The author is holding the driver.



Figure 14. The prep for the old lock is shown.



Figure 15



Figure 16

Figures 15 and 16. The author drilled two holes and bent the obstruction out of the way.



Figure 17. Here, you can see the horizontal centerline and the small spindle hole from the old mortise lock.



Figure 18



Figure 19

Figures 18 and 19. Take a look at this old night drop on a former bank

six threads available, although I've only shown you four. *Figure 13* shows me holding the driver. One side is the tap bits, and the blurry piece in the back is the reversible screwdriver bits: #1 and #2 Phillips and two sizes of flat or common.

This tool is a godsend and can be found in the electrical aisle at home centers. There are actually quite a few interesting electricians' tools there that you would probably find useful. One caveat about the tap driver tool: If you're done with the tap side, put it into the handle and leave the screw bits exposed. If you drop the tool with the tap bit out, there's a very good chance you'll break off part of the tap. Remember that taps are hard, but brittle.

I almost forgot the following part of this job, which is before I bought the Milwaukee tool. *Figure 14* shows the prep for the old lock. I'm not sure why it was favored toward the stop, but this was an issue because the pocket of the wrap wouldn't fit over it. *Figures 15 and 16* show how I drilled two holes and bent the obstruction out of the way. This was not easy, but the wrap covered it. In *Figure 17*, you can see my horizontal centerline and the small spindle hole from the old mortise lock.

Some Cool Safe Photos

Figures 18 and 19 are two shots of an old night drop on a former bank in Spring Lake, a beach town in New Jersey. You have to admire the quality of the work they did with these things and the pride they must have taken in doing so.

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Figure 20. This photo provides a side view of the section of wall the door is in.



Figure 21



Figure 22

Figures 21-24. These images show the front of the door, the dial and the inside, including the timelocks.



Figure 23



Figure 24

The photos in *Figures 20-24* are of a safe door in the basement of one of the buildings at that college. *Figure 20* shows a side view of the section of wall the door is in; I guess they removed the

vault and kept the door. *Figures 20-24* are pictures of the front of the door, the dial and two shots of the inside, including the timelocks. The white sign on the door says that the building had

been a Citibank branch at one time.

This is not the first time I’ve seen this in New York. For any of you living in or visiting my area, there’s one on the south fork of Long Island. There’s a Starbucks in Bridgehampton, NY, that has the front of a vault door in the wall behind the counter, encased in glass. It’s mounted similarly to the one above, so you can also see the other side as well.

One thing: If you’re visiting New York City, Bridgehampton is not close; it’s a two-hour ride, but if you go out to the island, stop in and see it. ☺



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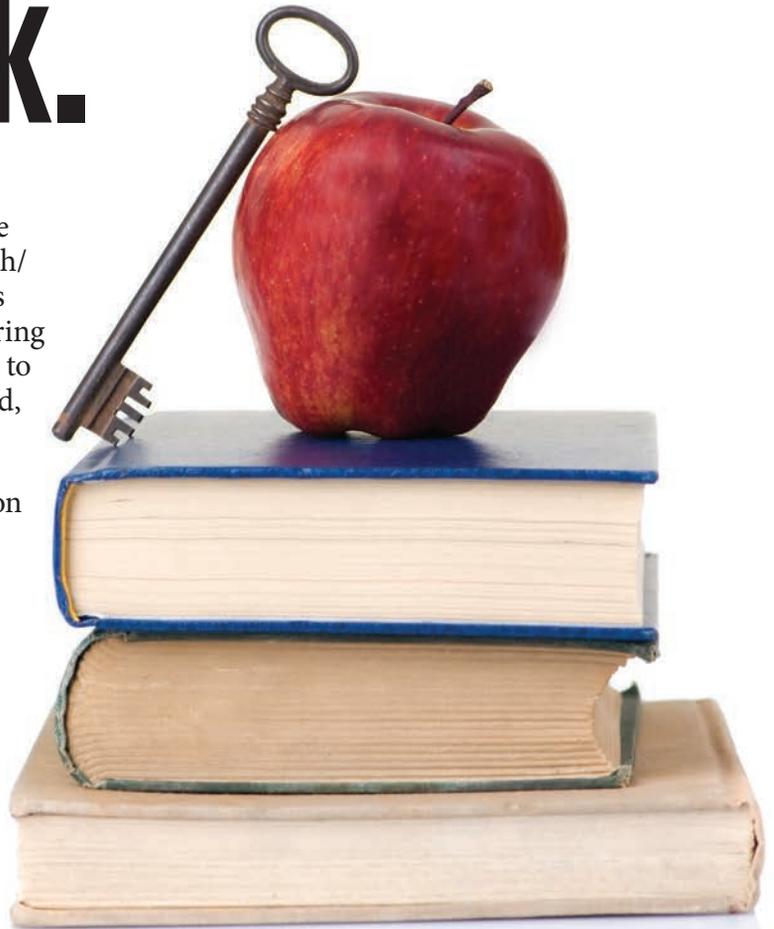
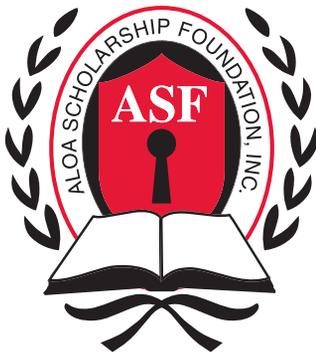
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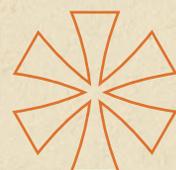
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