The official publication of ALOA SPAI, an international association of security professionals January 2022

KEYNOTES

SECURING YOUR SUCCESS

Minimalist MASTER KEYING

Using fewer master pins makes a system more secure

Emhart High Security — Still Out There!

What you need to know to service these systems

PLUS

In Memory of Breck Camp

Institutions and Incompatible Hardware | SAFETECH 2022 | Retrofitting BEST EZs

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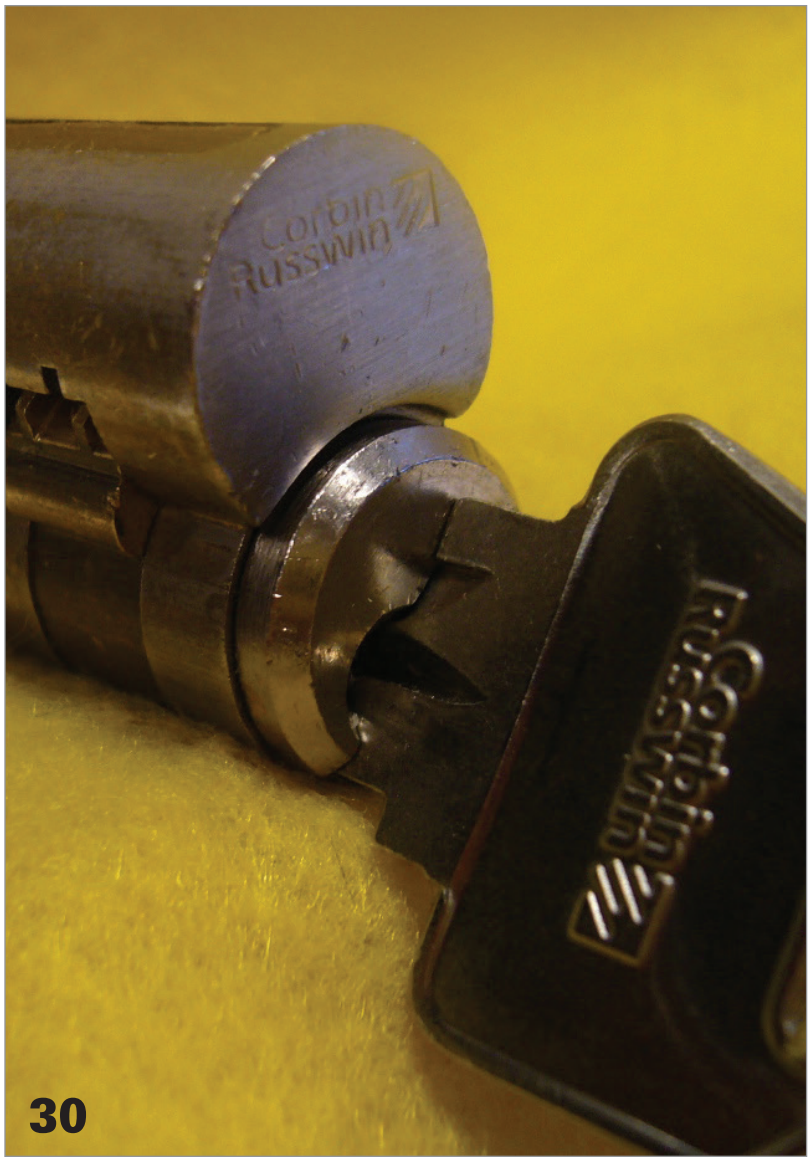

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Spotlights

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KEYNOTES

JANUARY 2022 | VOLUME 68, ISSUE 1

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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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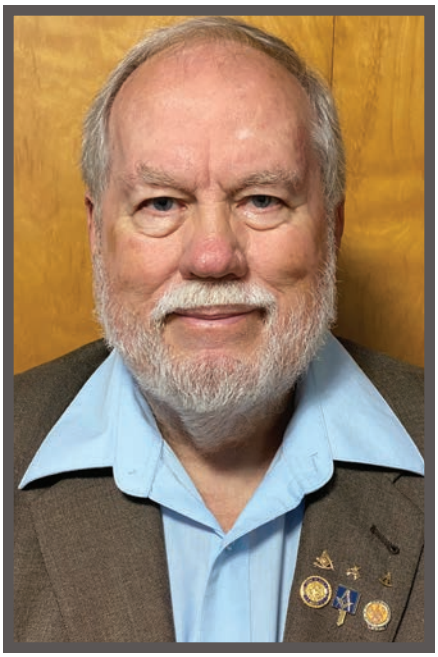
Review Your Pricing for 2022



What is an institutional (or institutionalized) locksmith? This is a locksmith who is an employee of an institution. Normally, this means working for only one institution. However, there are many of us who work for many institutions. Ever done work for a school? Most of us have, just not as an employee of that school. I do work for three different school systems. The smaller institutions cannot afford to hire a full-time locksmith, but they still need lock work done.

The true institutional locksmith usually only works on one or two brands of locks, and they have extensive knowledge of those brands. If the general locksmith can make friends with institutional locksmiths, it's a benefit to both of them. If you run into a lock that you cannot figure out, check to see if there is an institution near you that uses that brand. If they have an on-staff locksmith, see if he or she can help you. Likewise, if they run into something in the general field of locksmithing, you might be able to help them out. One hand washes the other.

This is where networking can be a huge benefit. Get your local institutional locksmiths to join your local association. Join the AIL division of ALOA. Knowing the members will help you get knowledge that you may need. People tend to help people they know. Would you tell someone how to take a lock apart and fix it over the phone, if you did not know that person? Probably not. However, if it were someone you're friendly with, you probably would.

> **"Think of yourself and your business, and be successful this year."**

Review Your Pricing

Did you raise prices this year yet? Better start thinking about it, because all the suppliers have already. Some have several times over. If your products cost more and you do not raise prices, you are losing money. You cannot afford to subsidize your customers just because they want lower prices. Think of yourself and your business, and be successful this year.

SAFETECH

Registration for SAVTA's SAFETECH convention opens soon. We will be in Lexington, KY, at the Griffin Gate Marriott April 4-9. This is a great chance for you to broaden your skills and learn a bit more about safe deposit locks and safes and vaults. There are classes for everyone, from beginners to experts. Take a look at the class lineup and see what you might be interested in. You can see the brochure on SAVTA.org, or email conventions@aloa.org if you have questions.

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

Happy New Year!

Last year continued to be challenging for many people and businesses. Illness, lockdowns and the changing way of business continue to change our everyday lives. ALOA SPAI has had its challenges as well, including not being able to hold our SAFETECH convention for the second year in a row in 2021.

Yet, hope remained, and we saw improvements and growth in several areas. We were able to return to print copies for our magazines, we grew our list of educational webinars, and our 2021 ALOA Convention & Security Expo in Orlando was a great success. It was a wonderful week of classes, camaraderie, product education and more. Thank you to everyone who attended, taught and exhibited, and we hope you had a wonderful time.

2022 Conventions

Be sure to mark your calendars for ALOA 2022 in Las Vegas, which will be held July 24-30 at the South Point Hotel & Casino. This was a great venue for us in 2019, and we are very much looking forward to returning. Unlike many of the other big casino properties, the classroom and Expo areas are consolidated into one general location, so you don't have to walk around a lot. And if you want to go to the Strip, it's a ten-minute cab ride away.

But first, we have SAFETECH 2022 coming up in April. Online registration is now open, so go online to SAVTA.org to view the full registration brochure and to register. We have several new classes and the return of the safe-moving class we have held before. For those looking to get into safe work, safe moving is a good service to consider, but it's essential that you know the safety procedures.

> **"One of the best pieces of news has been the establishment of a new automotive division."**

More Good Things to Come

Over the past two years, ALOA has made so much progress in adapting to the new busines environment and making improvements that we've wanted to pursue for years. One of the best pieces of news has been the establishment of a new automotive division. The formation of the International Association of Automotive Locksmiths (IAAL) was approved at our November board meeting. It will operate much like SAVTA does: as a separate division with its own board, but with a representative on the ALOA board to have a voice.

The division's operations are being planned, and we are hoping to have more automotive education offerings this year. If you have any suggestions, please contact education@aloa.org.

We are also hopeful that we will be able to hold more webinars and other online education activities this year, as there has been so much participation and interest. This is such a good way to get in some CEUs from the comfort of your home or office. And, if you didn't know, we also offer some testing online. Talk to our Education department for any questions.

Throughout the pandemic, our staff has continued to serve members in all the ways we always have. We are here to answer questions, provide technical information, take your suggestions and help you in any way we can. We may have changed locations, but our operations are the same: You, our members, are our priority. Thank you for signing on for another year as ALOA SPAI members and for supporting the industry.

We hope that this is a great year for you all and that you remain healthy. Whatever challenges 2022 throws at us, we are prepared to tackle them — together.

Mary A. May

Mary A. May
Executive Director
mary@aloa.org

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

Impressioning Tool

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

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SAFETECH Registration Is Open!

Registration is finally here! SAFETECH 2022 is just a few short months away, and now registration is available. 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 14, and you can email conventions@aloa.org for any questions. See you there!

Penn Ohio Locksmith Association Holds PRP Class

In conjunction with its meeting, the Penn Ohio Locksmith Association (POLA) held a PRP prep class in November, led by Bill Lynk. Students were able to take the PRP test the next day, on the same day as the meeting.

Missed this class? Attend SAFETECH 2022 in Lexington, KY for the STPRP prep class or ALOA 2022 in Las Vegas for the PRP test prep class. You'll be able to sit for the exam during the convention. For questions, contact education@aloa.org.

In November, Bill Lynk taught a PRP test prep class for the Penn Ohio Locksmith Association. Students were given the opportunity to sit for the test the next day.

PRODUCT BRIEFS

Locinox has introduced the FORTIMA-SD-R pool safety latch for round frames. It features anodized aluminum housing, magnetic distance of 1¼" and ¾" vertical tolerance after installation. It's rekeyable to match any lock and is tested up to 2 million cycles. For more information, visit www. Locinoxusa.com.

Lucky Line Products has introduced the Key Bak Sidekick, an all-in-one carry companion that secures both keys and a badge. It has a twist-free end, can hold up to six keys and has a retractable Kevlar cord with a 24" reach and an 80 lb. minimum breaking strength. The Key Bak Sidekick features a zinc alloy carabiner and a stainless-steel spring housed in a 1⅜" diameter polycarbonate case. It's made in the USA, measures 4⅞" long and is available in a black finish. It is sold one per clamshell and is available to order in packs of five.

Lucky Line Products has also introduced Purse Charm Keychains that clip onto the purse edge or inside pocket opening They are hand polished and nickel plated, and the spring clip incorporates ridges for extra grip but has a smooth finish. Each keychain includes an additional hole at the top of the charm to hang keys on a key rack or hook. Six designs are available: Mountains, Owl, Sprout, Mandala, Hummingbird and Heart. They measure 1" wide by 2⅛" high and include a ⅞" key ring and are sold one per card and can be ordered in packs of three. A 48-card display is also available.

Securitech's Auto-Bolt Max Exit Device, meant for high-traffic exits, is available in double door applications. It protects against break-ins with up to five points of deadbolt locking. A single action of the touch bar retracts all bolts simultaneously, meeting life-safety, accessibility and fire codes. Its stainless-steel deadbolts are ⅝" in diameter, and it's compatible with most keying systems. For more information, visit www.securitech.com.

NEWS BRIEFS

Autel US, the U.S. subsidiary of China-based Autel Intelligent Technology Corp., has moved into its new offices in Port Washington, NY. Autel's new 50,720-square foot building is on three acres and will be home to Autel US's technical and customer support, marketing, accounting, executive staff, fulfillment facility and warehouse.

"The purchase is a physical testament to the company's success and stature within the industry and within the United States, and further cements our identity as a New York business so fortunate to have access to the talented, educated, and experienced workforce the state offers," said Autel US CEO Chloe Hung.

RemoteLock has announced the expansion of its European operations with the acquisition of **SmartLock Europe**. Since 2015, SmartLock Europe has been providing remote access control solutions for commercial and vacation rental applications throughout the UK, and the company has been reselling RemoteLock's universal access control software. Stuart Duncan, founder of SmartLock Europe, will assume the role of vice president of European operations as part of RemoteLock's leadership team.

IN MEMORIAM

Past ALOA President **Breck Camp** passed away at the age of 83. He was a Life member of ALOA, having joined in 1970. See page 18 for a longer tribute.

Nelson L. Schoeffling of Southampton, NJ, has passed. He had been a member of ALOA since 1982.

NEW APPLICANTS

ALABAMA
Titus
- **Amy J. Brantly**

FLORIDA
Valrico
- **Irving P. Zambrana**
  Expedited Phos

GEORGIA
Dunwoody
- **John E. Scott II**
  Second Opinion Solutions LLC

ILLINOIS
Justice
- **Thomas J. Thill**
  Transponder City Inc.
  Sponsor: Frank A. Schlesser

INDIANA
Beech Grove
- **Paul A. Ingram Jr.**
  Southside Lock Service

LOUISIANA
Bossier City
- **Jacob R. Powell**

MINNESOTA
Burnsville
- **David M. Walters**
  Golden Supply Inc.

Ironton
- **TJ Graves**
  AutoSmith Service Group LLC
- **Brian G. VanDenburgh, CRL, CMAL, CAI, CFL**

MISSISSIPPI
Brandon
- **Hunter G. Holtsinger**
  Darrells Auto Electric Inc.
- **Bobby D. Odom Jr.**
  Darrells Auto Electric Inc.

NEW JERSEY
Cresskill
- **Daniel Zaytsev**

NEW YORK
Beacon
- **Gary Iciano**
  Sponsor: Lance D. Whitson, RL

OHIO
Massillon
- **Evan D. Rankl**
  The Locksmith Shop LLC

TEXAS
Dallas
- **Foster S. Adesoye**
  Genius Systems International

Texarkana
- **Stephen D. Craigen**
  LocksmithTXK

VIRGINIA
Scottsville
- **Randall Scott Johnson**
  University of Virginia in Charlottesville

WASHINGTON
Seattle
- **Eric S. Meyerson**
  Everblue

HONG KONG
Kowloon
- **Chan Ho Ching**

IRELAND
Dublin
- **Kenneth Toher**

ALOA CERTIFICATIONS
CRL
- **Joshua Mahn, CRL**
  St. Charles, MO
- **Zachary Piazza, CRL**
  Maryland Heights, MO

We Need Your Help

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

CALENDAR

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

APRIL 2022
April 4-9
SAFETECH 2022
Griffin Gate Marriott
Lexington, KY
conventions@aloa.org or
(800) 532-2562

JULY 2022
July 24-30
ALOA Convention & Security Expo
SouthPoint Hotel & Casino
Las Vegas, NV
conventions@aloa.org or
(800) 532-2562

ALOA Security Professionals Association, Inc.
Board of Directors Nomination Petition

What ALOA Board Positions Are Open and Where Am I Qualified to Run?

- There are currently **four regional director positions** open for election in addition to the position of **Secretary**.
- ALOA members now elect the directors from their own regions.
- Only ALOA members from a region are eligible to run for the open position(s) in that region.
- Members from any region are eligible to vote for or run for the position of **Secretary**.
- You must have been an ALOA member for at least three years to be eligible to run for a director position.
- The following vacancies will exist for the election that will be held on June 3, 2022:

Secretary	one position
Northeast	one director
South Central	one director
Northwest	one director
International	two directors

On this page you will find the required nomination petition, and on the following page, the commitment to ALOA board service form.

The following is the number of signatures required for each board position:

Secretary	25
Northeast Director	17
South Central Director	7
Northwest Director	3
International Director - Asia	5
International Director - Europe	5

If you have any questions, please contact the ALOA secretary: Clyde T. Roberson, CML, CMST (540) 380-1654 or by email: secretary@aloa.org

I, the undersigned, request that _____
(name of nominee and member number)

be placed on the ballot for _____ for the election to be
(position for which individual is being nominated)

held at the special meeting of ALOA-SPAI members to be held at the ALOA-SPAI International Headquarters, 1471 Prudential Drive, Dallas, TX, 75235 on June 3, 2022 at 11 a.m. Central time or any adjournment thereof.

I am eligible to vote in the _____ region.
(Associate, International, Northeast, Southeast, North Central, South Central, Northwest, Southwest)

1. _____
Printed Name Member Number Signature
2. _____
Printed Name Member Number Signature
3. _____
Printed Name Member Number Signature
4. _____
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Printed Name Member Number Signature

YOUR COMMITMENT TO ALOA BOARD SERVICE

(Please read carefully and sign where indicated)

The ALOA Board governs with emphasis on organizational vision rather than on interpersonal issues of the Board; encourages diversity in viewpoints; focuses on strategic leadership rather than administrative detail; observes clear distinction between Board and Executive Director roles; makes collective rather than individual decisions; exhibits future orientation rather than past; and governs proactively rather than reactively. (If you were not supplied a copy of the ALOA Board of Directors Governance Policy with this document, you may obtain one by contacting the ALOA headquarters office, or visit www.aloa.org.) The responsibilities of an ALOA Board Member include contributing a moderate amount of personal time, and a significant degree of professional guidance and expertise to the organization.

You will be expected to come to all Board Meetings and the Annual Membership Meeting. You will need to be prepared to sensibly discuss matters of great importance to your profession and participate in setting policy as part of a governing body. Your course of action during your tenure on the ALOA Board should be guided by fair-minded, constructive goals pertaining to matter of consequence for ALOA and for the industry. Your contributions are expected to benefit ALOA as a whole, taking individual member rights and concerns into account but free of the taint of partisan politics of personal gain.

On a practical note, ALOA Board Members are expected to behave and dress professionally at all times, especially when actively representing the association. ALOA Board Members are required to participate in three Board meetings per year, of two or three days in length, one each fall, spring and one during convention, in addition to the Annual membership meeting, which is also held during convention. Incoming Board Members are also required to attend Governance training classes and events during convention. Board Members may also be asked, on a voluntary basis, to represent ALOA at related local, state or regional functions, including serving in the ALOA booth, and otherwise promoting ALOA. When travel is required for a Board Member, expenses covered by ALOA include lodging, travel and a reasonable per diem. The Board has stipulated that assigned travel will be reimbursed at the lesser of the 30-day advance tourist class airfare in effect at the time of travel, or the current per-mile rate for travel by personal automobile, whichever is less. Spouse expenses, including extra room charges, etc. are the individual's responsibility.

I have read and agree to adhere to the ALOA Board of Directors Governance Policies. Furthermore, I understand the above responsibilities of an ALOA Board Member, and agree to commit my time and energies as needed. I certify all of the information contained on this form and supporting documentation to be true and complete.

Candidate Name: _____

Address: _____

Member #: Phone: _____

Signature: _____

Date: _____

Membership Status:

Active _____ Life _____ Associate _____

Employer Name: _____

Address: _____

Please attach a recent photograph of yourself along with a 150-word-or-less biography and retain a copy of this form for your own files. This form and all supporting documents must be received no later than March 1, 2022. Mail or e-mail to:

Clyde T. Roberson, CML, CMST
Secretary, ALOA Board of Directors
1408 N. Riverfront Blvd. #303, Dallas, TX 75207
Email: secretary@aloa.org
Phone: (540) 380-1654

Learn More With IAIL

By Brian VanDenburgh

With a new automotive forensics class taught for the Alabama Locksmith Association by request, 2021 ended on a positive note. The class taught in Hoover, AL, covered mechanical key investigation and electronic data stored in vehicles and on keys. We did a mock investigation on a 2019 Dodge Challenger, and we were able to identify the key's electronic identification and compare to the information stored in the vehicle. We were also able to identify the VIN stored in 19 electronic module locations for comparison. The class was a success, and we gained several new members for IAIL.

New classes continue April 4-9 at SAFETECH 2022 in Lexington, KY. Past IAIL President Tom Demont will be conducting a forensic safe investigation class, with James Ashley assisting. SAFETECH registration is opening up online soon, so look for the brochure PDF on SAVTA.org to learn more about all of the classes and events. Email conventions@aloa.org for questions.

We're also working on a class schedule for ALOA 2022 in Las Vegas in July. Additionally, we are exploring the possibility of holding a fall IAIL training conference. If you have new class ideas or specific training needs for certification requirements, please let me know via email.

Rejoin IAIL

If you were a member of IAIL, please consider rejoining; we value your knowledge and experience. To find out more about joining IAIL or to rejoin, you can email membership@aloa.org to be pointed in the right direction. If you are on Facebook and an IAIL member, you can join our group there through the link on the ALOA Facebook page. We would love to grow our engagement there so members can share information, ask questions and generally form a community.

Thank you to all our members, and I wish you and your business continued success in 2022.

IAIL President Brian VanDenburgh teaches a class for the Alabama Locksmith Association in late 2021.

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

Get Published!

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

SAFETECH Registration Is Open!

Come fill your glass with all of the classes and events to be held at SAFETECH 2022 in Lexington.

SAFETECH 2022 REGISTRATION IS FINALLY HERE! Join us in the heart of the safe and vault industry April 4-9 for industry-leading education and a chance to make new connections.

The full registration brochure is available online at SAVTA.org on the Convention tab. There, you can see the full class descriptions, schedule of events and download a copy of the brochure. You can also register online! That is the quickest way to register and will give you a greater chance of getting your first pick of classes, as some always fill up fast.

Come be a part of the mix and learn some new skills! The SAVTA crowd is incredibly welcoming, and the close-knit environment of SAFETECH is like no other.

What more proof do you need? See you there!

SAFETECH 2022
April 4-9
Griffin Gate Marriott
Lexington, KY
Hotel rate: $129 plus tax
Room Block Cutoff: March 12

The Wonderful World of Commercial Hardware

This area continuously evolves and plays a big role in physical security at institutions. **By Steve B. Fryman, CRL, CAI, CISM**

It's amazing to think that humankind has been using some form of hardware since ancient times. In 2,000 B.C., Mesopotamian/Egyptian carpenters were creating locking wooden bars to secure doors from the inside. A natural evolution occurred with the need for unlocking/locking the bar from the outside. Hence, the wooden pin tumbler lock is born. The wooden key would release a lever, enabling the key holder access via pushing the lever that would release the bar, unlocking the door.

Fast forward thousands of years, and the need to secure doors still exists. As physical security professionals, it's important to see the evolution of commercial hardware. We recognize that as needs arise for improving physical security, the hardware manufacturers rise to the occasion to meet needs. There are three dominant hardware manufacturers that come to mind: ASSA ABLOY, Ingersoll Rand and dormakaba — let's call them the Big Three. Everyone has their favorites for different reasons based on durability, reliability and familiarity.

Through modern history, there have been great innovators at the forefront of the commercial hardware industry, such as Lynus Yale Jr., Frank E. Best, and Medeco innovators Paul A. Powell and Roy C. Spain. These great minds have engineered a course, forming the base of all things in the mechanical world of physical security.

Life-saving Innovations to Industry Standards

Vonnegut Hardware Company developed an exit device in 1908: the "panic bar." This was born out of a need to safely help building occupants exit a building during emergencies. The tragedy of 600 deaths caused by a fire at the Iroquois Theater in Chicago on December 30, 1903, inspired this solution to save lives. The Vonnegut hardware company's exit device was sold under the name Von Duprin, which is a combination of the inventors' last names: **Von**negut, **Du**pont and **Prin**zler.

The institution where I work was established in 1851 and uses the Von Duprin exit device. The remnants of the hardware from the 1800s is long gone, but the use of the modern fire-rated Von Duprin is very

much a mainstay protecting life and property. It was not until 1896 that the National Fire Protection Association (NFPA) was established to provide fire codes to the hardware industry, end users, and building and fire officials. The codes are evaluated every three years, and the current iterations of NFPA 101 and 80 are in use for life safety and fire codes. As physical security professionals, we need to remain current on these codes. ALOA SPAI offers regular classes on life safety and fire code use.

Hardware Guidelines

How do architects, architectural hardware consultants and contractors know what hardware is to be installed on our buildings? In short: hardware guidelines.

One of the biggest complaints I hear from institutional locksmiths and folks who manage key systems and hardware is about the number of non-compatible keyways and mix of brands at their institution. Having hardware guidelines can help eliminate the jumbled mix of non-compatible items installed on your buildings. Having standards also keeps things fair during the bidding process, allowing the comparison of apples to apples. In addition, having hardware guidelines simplifies part replacement on daily maintenance issues.

Does your institution have hardware guidelines? If it does, are they kept updated and available online for the architects, architectural hardware consultants (AHC) and contractors?

Other than brands and keyway preference, how can the hardware guidelines help you? You can set preferences between your obligation and the contractor's responsibility. Here is an example: The institution is responsible to furnish and master key up to 10 cores/cylinders per project. Projects requiring more than 10 cores/cylinders must be provided by the hardware subcontractor. This is especially helpful if you have a small or no staff. The sub-contractor is responsible for having the project factory keyed. Naturally, you will provide a keying schedule.

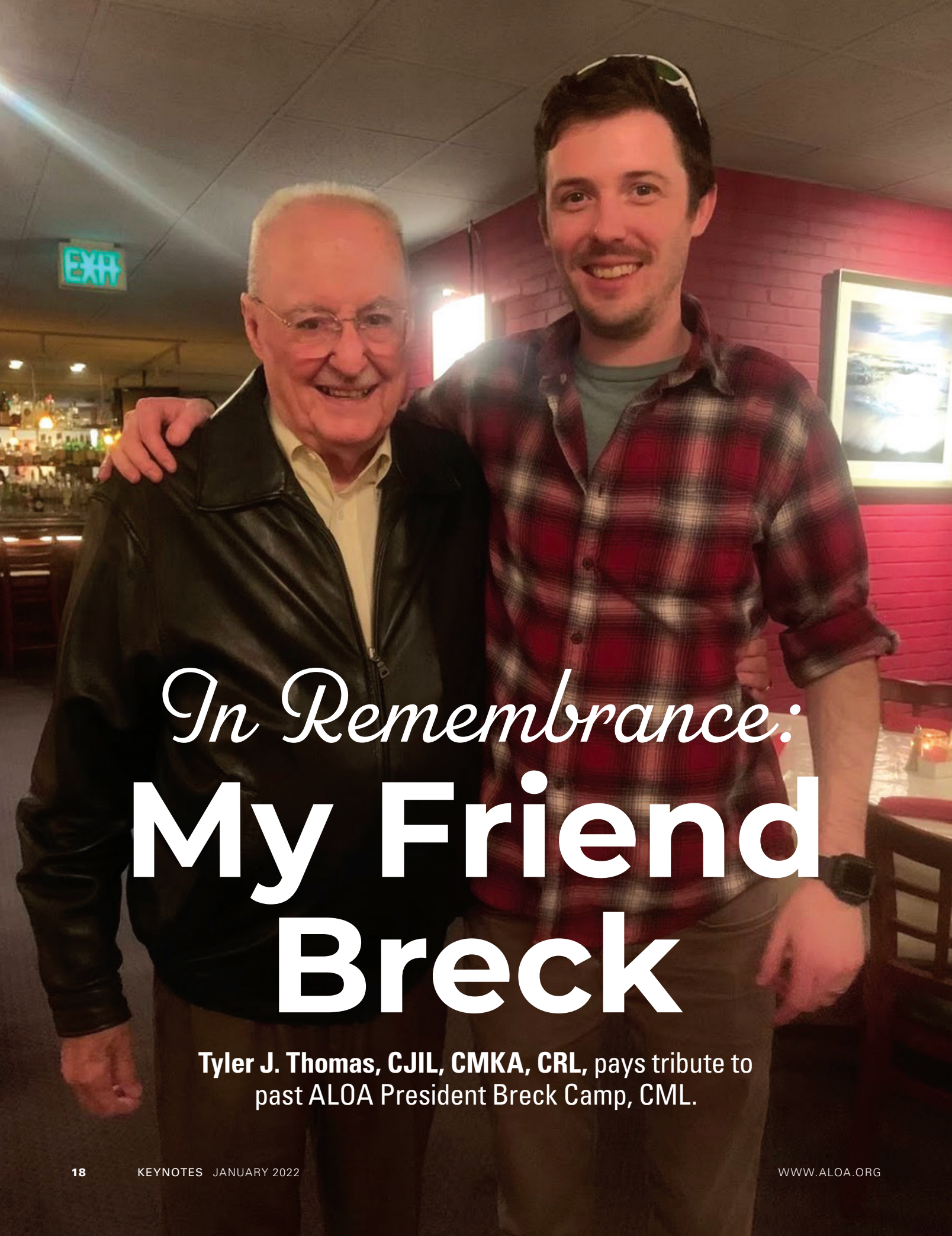
Something else that's helpful to add would be the color of finishes. Folks not familiar with your building may want to order finishes that are not compatible with the rest of your buildings.

If there is demolition on a door replacement project, have the contractor provide you first right of refusal on used hardware and cores. These are wonderful items for your bone yard and are especially beneficial for discontinued locks that need parts replaced.

No matter where you fit in the physical security world, commercial door hardware will continue to play a dominant role in our daily lives as security professionals. We owe a huge debt to those who innovate and manufacture commercial door hardware as we plow headfirst into the future.

"Having hardware guidelines can help eliminate the jumbled mix of non-compatible items installed on your buildings."

Steve B. Fryman, CRL, CAI, CISM, has worked in the physical security field for more than 40 years. Now working as the key compliance manager at Florida State University, he previously served as an institutional locksmith at the University of Florida and in the private sector with his own locksmith business. He developed the first curriculum and testing for the Certified Institutional Shop Manager designation, making him the first recipient of this credential.



In Remembrance: My Friend Breck

Tyler J. Thomas, CJIL, CMKA, CRL, pays tribute to past ALOA President Breck Camp, CML.

My friend Breck Camp, CML, was born February 7, 1938. He passed November 11, 2021. Believe it or not, it was a near miracle a few times over that the man was involved in this industry at all. Breck was born a premature twin in Grainger County, TN, in a time when premature babies didn't have a chance, and especially so in a rural setting. His twin passed shortly after their birth, and Breck wasn't given much hope either. His mother was told to take him home and anticipate his inevitable death. His aunt sat him in a shoebox and fed him with an eye dropper. Unbelievably, he survived.

When it was his time to make his mark on the world, Breck found a calling in the pipe organ business. He toured a large swath of the U.S. tuning and servicing organs in churches —quite successfully, I might add. A chance phone call and inheritance, however, changed his fortune and the locksmith world altogether. He was offered a chance to buy a failing locksmith company and did so — after being given only 48 hours to decide (which resulted in him rushing back to Atlanta to inventory the entire shop over a single weekend).

The rest, pardon the cliché, is history. Breck transformed the company, soon to be called Security Engineering Consultants, into a truly worldwide operation that specializes in high-security master key systems. Since I've been involved in the company, we've serviced systems and locks on every continent except for Antarctica. When that day comes, as I warned Breck many times over, I will exit this industry forever; I'm on borrowed time. He also made his name in the industry by selfishly devoting decades (plural) to advancing the trade and ALOA SPAI.

"In the last few days, a mutual friend told me of Breck, 'He had a King's lot but a servant's heart.'"

Our Friendship

Now to make this about me. Breck and I met by chance when a customer brought a key to the shop of a company I worked for in 2008. I had no answer for the customer but, being young and naïve, I told them I would get them the answer. I found the answer via ClearStar, and it was because of Breck Camp (it was one of his master key systems). We stayed in touch over the years.

In 2017, Breck's partner and integral part of his business, M.W. (Buzz) Whitman was diagnosed with a terminal illness. Weeks later, his director of operations, Stephen Gebbia, CML, was also diagnosed with a terminal illness. In the matter of a month, it seemed to Breck that everything he worked for and accomplished in the past 50 years, businesswise at least, was at risk of going away.

But that wasn't to be. He called me, and I didn't hesitate to go to work for a peer, a legend and a friend. We spent the next four years working together daily and spending every Friday night enjoying adult beverages while watching MASH. I wish I could say I learned more about locksmithing but, truthfully, I learned far more about life. Honestly, this wasn't about me; it's a testament to the experience that many have encountered over the years: a great man giving an opportunity to someone because he saw potential. If you were one of those people, know that Breck saw something in you and didn't hesitate for one second to get behind you. Trust me, I am not unique, and I am not alone.

Per Breck's wishes, there will be no funeral and no causes or charities to donate to; he would never expect or ask anyone to do something on his behalf. But he and I are different in that respect (I am far more stubborn), so I ask you all to do the following in his memory:

1) Pursue your certifications. The PRP was Breck's baby, and he would be the first person to tell you it was never meant to be a sign of prestige or a status symbol; it was meant to make you a better locksmith. Take advantage of it and learn what you know and what you don't. It will only help you in the end.

2) We all start knowing nothing. When you do learn something, turn around and extend a hand to your fellow locksmith and the next generation. I cannot tell you how many phone calls and emails I saw that man answer to help people he had zero obligation to help, but he did because that is just who he was and who we should all strive to be.

In the last few days, a mutual friend told me of Breck, "He had a King's lot but a servant's heart." That, my friends, is how you live life. That is a life well lived. I hope you and Hank Printz, AJ Hoffman and many other of your friends are catching up for lost time. Rest easy, Breck. Job well done.

Tyler J. Thomas, CJIL, CMKA, CRL, is the vice president of Security Engineering Consultants in Atlanta, GA, and serves as ALOA SPAI's Southeast Director. He helps maintain the website www.lockreference.com.

Some of the Most Famous People No One Has Ever Heard Of

The people you encounter at conventions can be more important — and helpful — than you think. **By Richard Howard, AAADM, CFDAI, CPL, DHC, DHT, ICPL, IQP**

A very exciting aspect of the ALOA convention and week of classes there is how many "famous" faces you will see. Leaders in the industry (the most famous people no one has ever heard of, as I like to put it) are everywhere and often visit classrooms during the five days of education. People you may or may not recognize meander in and out of the classrooms throughout the week. Visitors, lost students and the ALOA official photographer are easily spotted. On the morning of my first class (High Security Cylinder Servicing), two gentlemen entered and took seats in the rear of the room. Mr. Lynk acknowledged them, though he did not introduce them to the class. After five seconds, class went on. I and all my classmates soon lost interest in who these visitors were and resumed full attention to the subject at hand.

During the mid-morning break, I approached Mr. Lynk, explained what I was doing regarding my article and asked him to "take a peek" at lunch. His response — more of a reaction actually — was to stretch his arm, point his finger to the rear of the room and say, "You don't want me to look at it; you want *him* to look at it." As I turned my head and looked in the direction he was pointing, the "him" he was referring to was one of the two gentlemen who entered the class earlier: a comely, quite unassuming man in an average unassuming suit and tie.

The jacket may have been tweed, perhaps 15 years old. I was unsure if I was rejected or just merely being cast off to a lesser individual. The man made no real acknowledgement of this odd interposition, and I may have betrayed a hint of

dejection at that moment, as my mind was assuming the latter. I will admit I was more than dejected; perhaps despondent. I really wanted this technical portion of my article to be reviewed for blatant errors, and it seemed as if that opportunity just slipped through my fingers. I had no backup to my plan to get a superior to review my work — if only for a few moments, and just enough to spot any fatal flaws. I decided I would have to be more forward with Mr. Lynk after lunch, as I assumed the mystery man would be long gone when lunchtime came.

Lunchtime came, and the man was still in the same chair at the table in the back of the room, and he was quite alone (though I was just marginally happy to see him sitting there). I would be quite rude, after that earlier introduction by shotgun, to just walk past. I decided I would engage him. As I approached him at the rear of the room, I started feeling as if I had nothing to lose. I realized at least I would have a chance at the second-best person to look at my work. It occurred to me that the gentleman must be at least worthy of some value, and I questioned myself for "judging a book by its cover." After all, the instructor recommended him.

A Pleasant Surprise

I approached him, introduced myself, stated what my project was and asked politely if he would take a look. In a somewhat muted though thoroughly polite and vibrant tone, he agreed. I opened up my laptop and started nervously explaining to the gentleman what he was looking at. I began with my KBA. I had used the Corbin Russwin Master Ring KBA in a way not shown in the C/R Cylinder Manual. I had studied the portion of the original text for so long that I could no longer be sure of myself.

The man gazed on and was rather still and uncommunicative. I at first thought he might be faking interest and being very polite, or perhaps he had no foggy idea what I was crowing on about. At this moment, I began to realize this man was studying my KBA as if to break it, stretch it, turn it over and see if it would fail in the mental tests he was exercising it through. Not wanting to impede the stream of inner thought I was witnessing, it was my turn to be mute.

"The most technical part of my article just survived — dare I say — 'peer review.'"

It was now quite obvious this quite unassuming, thin 60-something-year-old man I have never met was engaged in the process of decoding, possibly grappling with my work as if it was a mind puzzle. It grew very quiet at that table, with just the two of us in that large empty room with the strange patterns on the commercial carpet and the hum of the HVAC. As the long seconds turned into even longer, I started to feel as if I was intruding in this man's "private time." Was he sleeping, but with his eyes open? Was my article simply atrocious and my conclusions pathetic?

I finally built up courage and began to stir. But before I could speak, the gentleman said, "I see what you are doing there." He then asked a couple of clarifying questions. As I answered him, I felt as if all of Niagara Falls just washed away my confusion and self-doubt. He asked pointed and expert-driven questions. I explained how and where I took liberty with the original text, and he seemed to concur that my extrapolations were not "out of bounds." Most importantly, nothing negative was said regarding my conclusions.

I thanked him excitedly, mostly relieved. I realized I just consumed 20 minutes of this man's one-hour lunch break and felt immediately awful for that. He gave me his business card and took his leave. I went to the dining area and quickly filled a plate of leftovers (not a lot of salad eaters at ALOA it seems, as I had the leafy greens all to myself). I found people I knew at a close table and sat down to start as they were finishing. Great! The most technical part of my article just survived — dare I say — "peer review."

A Few Weeks Later

Fast forward a couple weeks to when I was back home in Florida. I was at my desk and intently focused on studying for the L-08 High Security Cylinder Servicing Elective PRP. This, after all, was the primary reason for traveling to Las Vegas: to learn firsthand what I needed to pass this PRP. That evening, I needed to dig into Medeco deeper. I knew there would be questions on the exam about keying rules regarding master and change keys and their relationship to the cuts on the control key for operating the control lug as the "rules" specifically related to Medeco. "How could there not be Medeco questions on this PRP?" I thought. After all, I was told at that time that Medeco supplied the majority of all North American high-security cylinder work. This made me realize I had better know Medeco theory as thoroughly as possible.

I was studying the textbook provided in Mr. Lynk's class. As I flipped toward the Medeco section, I noticed a business card. It's common for me to stuff business cards I obtain at shows, classes or conventions into the books or literature I gather along the way. It was the nice, quiet man's card that he gave me after

> **"At this moment, I began to realize this man was studying my KBA as if to break it, stretch it, turn it over and see if it would fail in the mental tests he was exercising it through."**

taking from him 20 minutes of his lunch hour. I looked at it and fondly recollected his patience, then set it aside (Though for the first time, I realized the man was from Medeco). I thought, "That makes sense," as every interaction I have ever had with Medeco technical support has always been a showcase of professionalism. Looking at the card as I put it aside, I wondered if he went by Peter or Pete and whether or not his wife told him to stop wearing that old sport coat.

I proceeded to read the Medeco section of the class textbook, and the thought came to me to Google search the patent for Medeco³ and review its very cool locking sidebar. I knew the M³ had been around for a while, and I also knew the patent was set to expire relatively soon on this product. I wondered how cool the next evolution of Medeco would very likely be. I wondered how Medeco would expand the platform yet retain backwards compatibility. What would come next for this innovative company?

A Realization

Anyway, patents are an easy internet search and are a crucial step in researching lock technology for the first time. This Medeco patent is not unlike all others in that it is filled with words that do not seem to belong together and has weird numerical references, cross sections, hatch drawing, witnesses' names and signatures. I always look at the name(s) of the inventor. Neither name seemed familiar but wait… wait one minute! I looked at the business card, then back at the patent and then back to the business card again. I realized that the quiet unassuming man — who very graciously and freely gave me 20 precious minutes of his day — was none other than Peter Field, one of the two inventors of the Medeco³ platform. Well, I'll be....

This is why you join and remain in ALOA. This is why you participate in education. Every single person I have ever encountered in ALOA is willing to help — even a person who is directly responsible for one of the cornerstone technologies of the company that supplies the majority of high-security cylinders in North America. You will meet some of the most famous people in the world whom no one has ever heard of. Thank you, Mr. Field. I hope retirement is treating you well, and if you ever get to Southwest Florida, stop in. I owe you a full lunch hour, and I am buying.

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

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Fichet: The French Orphan in America

This odd safe provided some consternation once it was finally "adopted." **By Bryan Kruysman, CML**

THE USED SAFES WE GET IN OUR WAREHOUSE COME FROM ALL SORTS of jobs and places. This Fichet safe came to us sort of oddly. We were hired to move the safe from one home to another. Not unusual, as the customer had bought the safe from an estate sale and could not move it himself.

We found out that he did not have the combo when we arrived to move it. After examining the safe, I told him we could do research and recover the combo, but it was not included in the move price. He decided to back out of moving the safe but did not want to pay me, so he said we could have the safe instead. I would

Figure 1. The French beauty is shown before the new lock was installed.

Figure 2. This image gives a close-up view of the c2c lock.

Figure 3. The inside of the c2c lock is shown.

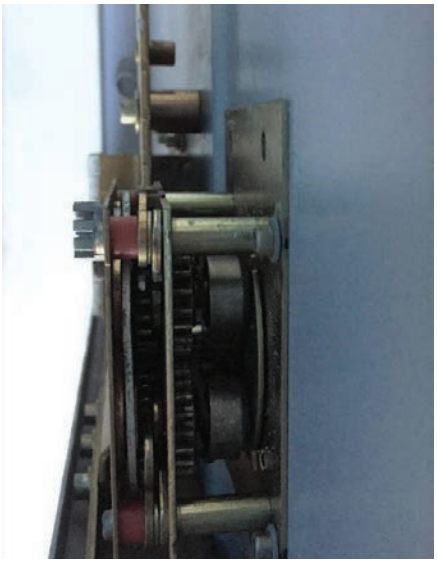


Figure 4. The side view of the c2c lock is shown.

Figure 5. The key is for the bottom lock.

Figure 6. The back cover holes are shown (maybe used to change the number of clicks).

Figure 7. This image provides a view of both locks from inside of door.

Figure 8. The safe's lock is removed.

rather have money, but the safe is better than nothing.

The Safe

As you can see, this safe is a bit odd, so it came to be mine. Because of the unusual lock, the safe might sit a long time before being "adopted."

The lock on this safe is a Fichet model #c2c. I am going to describe as best I can the procedure for opening this lock. The lock has a two-part dial. The first part is used to determine what wheel you want to move, so it's numbered 1-4. The second part of the dial is used to count clicks. So if the number-one wheel is set to 4, you would count four clicks.

This is the procedure for dialing it:

Step 1. Push the inner dial in and turn to set number 1 to the dialing index.

Step 2. Clear the outer wheel by turning it counter-clockwise and then count the number of clicks for that wheel. So, four clicks on wheel one.

Step 3. Repeat steps one and two for the next three numbers, each time advancing to the next number on the inner dial.

Step 4. Go to the opening index on the inner dial (a small recessed area), and then turn the outer dial to pull the bolt back.

So, that's easy for you or me, but imagine trying to sell that to someone for practical use. Not many people could do it.

Figure 9. The standard-footprint plate is welded in place.

Figure 10. The French safe is "Americanized."

Figure 11. The author is getting ready to take the safe off the trailer.

Making Updates

I made the decision to change out the lock and update this French beauty to an American lock. The c2c was removed and sold off to someone who wanted to play with it (yes, he was a safe tech). I am lucky to have a welder next door to our warehouse, and he had the task of welding a standard-footprint plate inside the safe. If you have never used one of these plates, it is a great way to update a non-standard lock footprint to a standard footprint. Most safe lock distributors sell them.

The safe lock was updated to a LA GARD Basic. The safe looked great and worked perfectly, but it sat in our warehouse for six months waiting to be adopted before someone from Tampa discovered it on our website. I keep a complete inventory of new and used safes on the website. If you tag everything, they get noticed.

I talked to a customer from Tampa about the orphan, and he agreed to come look at it in person. I had him take a video of the entrance to his house and the interior path the safe would take.

Safe-Moving Difficulties

Plan A: He had a front porch that provided the easiest way in. Our plan was to back our trailer right up to it and then lower the trailer right onto the porch — straight in, no down and then back up. The customer told me he was on a high spot. A high spot in Florida usually does not mean very much (we are kind of flat here). The video did not show the incline very well.

Figure 12. The safe was removed from the trailer with the pallet jack.

Figure 13. The safe was transferred from the pallet jack to Rol-A-Lifts.

Figure 14. The author is balancing the safe as Big John (aka Thanos) straps in the Rol-A-Lifts.

Figure 15. The van is pushing the safe up the driveway.

Figure 16. The safe is entering the garage from the driveway.

Figure 17. The winch is attached to the safe. The ramp is braced, and the safe is ready to go upstairs.

Figure 18. The safe is starting its way up the ramp.

Figure 19. The safe is almost up the ramp.

Figure 20. The author is sweating but very glad to be inside.

Figure 21. The safe has made it to the living room.

He paid for the safe, and we set out to deliver it. When we arrived, the high spot was not like we had pictured it from the video. We tried to back up the trailer to the porch anyway only to find that trailer hitch was bottoming out on the driveway. Time for plan B. Then it was time to figure out what plan B would be.

Plan B: Push it up the driveway into garage, and then push it up the stairs on a ramp into the house. Well, this safe is approximately 1,700 lbs. Include two Rol-A-Lifts at 200 lbs. each, and that comes to 2,100 pounds. Big John has some thick legs, and he tried, but it was not going to happen. Time for plan C.

Plan C: I hesitate to tell you plan C, but then the story would not have an end. Plan C was to push the safe up the mountain (it got bigger) with the front of the van. We had to disconnect the trailer first and put some protection on the bumper. The trailer hitch did not bottom out, because the weight of the trailer was gone. It really worked well, but it felt wrong. I am not sure why, because it was not unsafe. Maybe it was because I had never tried this before. Big John walked beside the French girl up to her new home. It was finally up the driveway. Then it was time to get it up the stairs and into the house.

Figure 22. The safe has entered the master bedroom.

Figure 23. The safe techs are down to the last few feet, beefing the safe into place.

Most houses in Florida have a step up into the house from the garage, but this house had four or five. Now for part two of plan C. No way could we push it up this incline. We put our ramp in place with plenty of bracing underneath. Next, we put a brace inside the house to give us an anchor point. Then we attached the come-along winch to the Rol-A-Lift. We would winch it a bit, then move the brake up to the wheels, then winch it more. Slowly but surely, it climbed the ramp. Finally, we were inside the house! The rest of the move through the house was a breeze, except we had to muscle it into a tight closet.

The customer was happy, I was happy, the orphan had a new home, the combo was set by the customer, the money was collected and we were done (except the long drive home).

The lesson: Have more than one plan when moving a safe, and don't be afraid of the odd safes. They need a home, too.

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

Figure 24. The inside of safe is shown in its final home.

EMHART HIGH SECURITY— *Still Out There!*

Learn all about this system in case you encounter it in the field.

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

As a system Emhart is still extant, though waning in usage. That's because it's a high security keying system that's only being supported for existing systems (and there are many). Thus, new systems for it are not being created. Why? The patent on Emhart ran out in 1995, but many of the key blanks are still restricted, and the manufacturer still has a tight hold in place to protect preexisting customers. So, why the buzz?

I still receive emails and calls from institutional locksmiths about specifics on the Corbin Russwin Emhart High Security System. One young locksmith inherited an Emhart system when he changed institutional jobs and told me he was overwhelmed; he had no knowledge of this system in his previous position. So, aside from what can be found in the tech manual, it's time to educate our friends and dispel rumors that abound in a simple, explanatory fashion. We never know what the future may bring, but being prepared is an excellent tool.

Historical Perspective

I know many locksmiths cringe at the thought of reading "historical background," but I put it forth because many of us have no idea where we came from. In light of so many "masters" retiring and passing away, it's essential that we remind each other of the past. This duty seems left to only a few of us to continue that torch. More importantly, it puts into proper perspective the "hows" and "whys" of a product line, from its inception to retirement. That could be the missing bit of information you might need to make sense out of an existing system. If you are totally against knowing what has happened in the past (not sure why you would be), then just skip this section.

Corbin & Russwin

Both the Corbin and Russwin companies have a distinguished history that dates back more than a century and a half and can be traced to a long lock heritage throughout New England. Let's see why.

The story begins with Henry Russell and Cornelius Erwin, who were plate lock manufacturers in 1839. Unbeknownst to them, 47 years later, they would create a trademark that would be known worldwide: Russwin. During this time, a man by the name of Linus Yale was designing and manufacturing locks. Who would have guessed that many years later the companies would all be joined under one roof? But large mega-mergers and acquisitions were certainly not the norm in the early to mid-1800s.

Ten years later, in 1849, Philip and Frank Corbin, with Ed Doen, formed a company by the name of Doen, Corbin & Company. Only two years later, Russell & Erwin incorporated their business and named it Russell and Erwin Manufacturing Company. Fifty years later, the companies would marry, but first, a name change was in the stars. In 1852, Ed Doen sold off his stock holdings with Russell and Erwin Manufacturing Company, and it was renamed P. and F. Corbin Corp., a renowned company name that would last for more than a century. Russell and Erwin Mfg. Co. was still going strong and used the Russwin trade name for the first

Figure 1. This is an Emhart UL Listed mortise cylinder.

Figure 2. Notice the unique bow shape and the undercut grooves on the Emhart key, pictured with a mortise cylinder.

time in 1886. They, too, would see a name change, but not for 11 more years.

The "new age" entered, and horse-drawn buggies were on the verge of obsolescence as 1900 arrived. And with the new century, a new company: In 1902, The American Hardware Corporation was formed by the mergers of Russell and Erwin Mfg. Co./Russwin and P. and F. Corbin Corporation. Even though they were officially "under one roof," the two companies still continued independent operations for 87 years.

It wasn't until 1964, after a series of acquisitions, that American Hardware was purchased by the Emhart Corporation, though Corbin and Russwin were still operated as separate lock manufacturers. Fifteen years later, Emhart sold both divisions of Corbin and Russwin in 1989 to the Black & Decker Corporation, famous for its manufacture of tools and appliances. Their names were eventually changed from Corbin Architectural Hardware and Russwin Architectural Hardware to the merged brand Corbin Russwin Architectural Hardware. In 1993, both companies — including their manufacturing facilities in Berlin, Connecticut and Clarksdale, MS — were purchased from Black & Decker by Williams

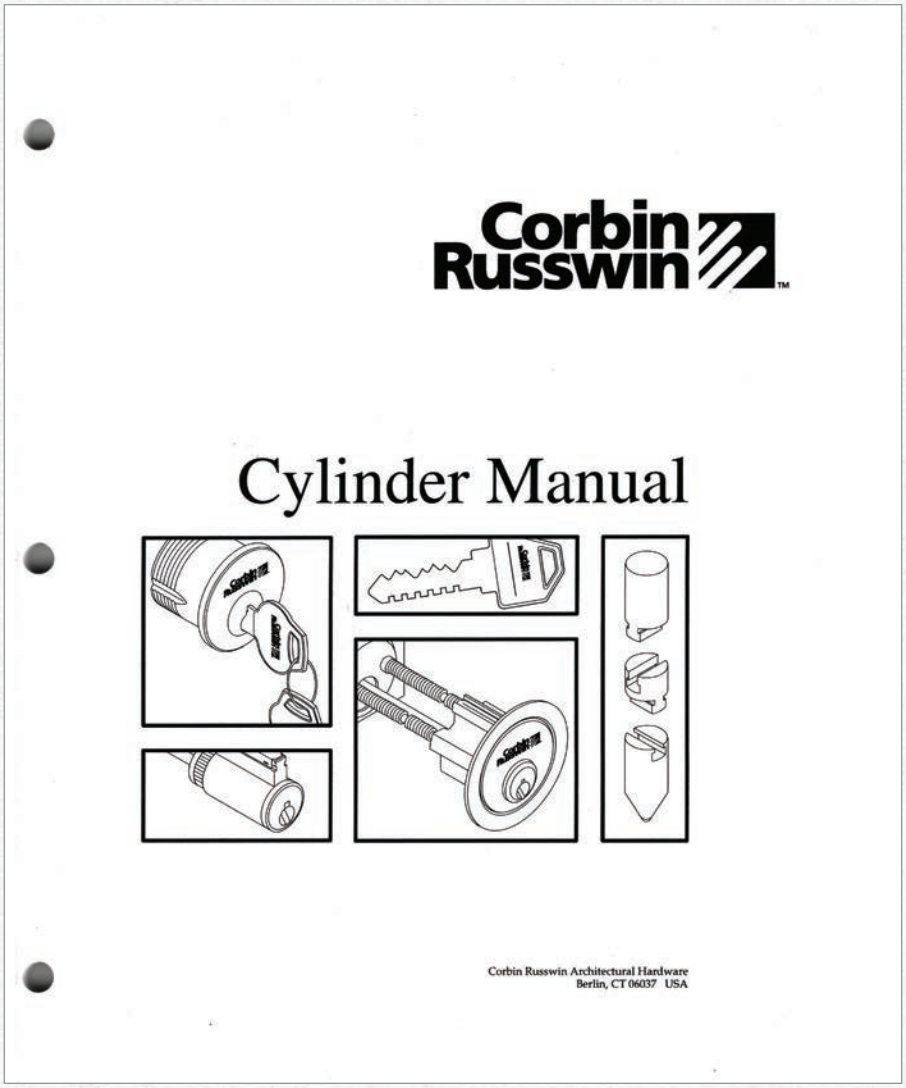


Figure 3. The cover of the Corbin Russwin Cylinder Manual is shown.

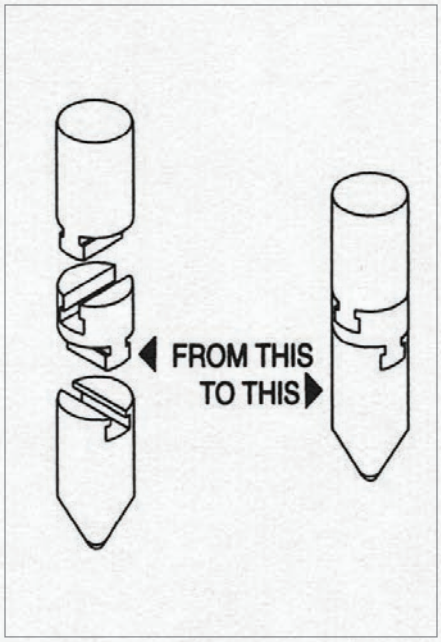


Figure 4. The Emhart interlocking pins are shown in the open and closed positions.

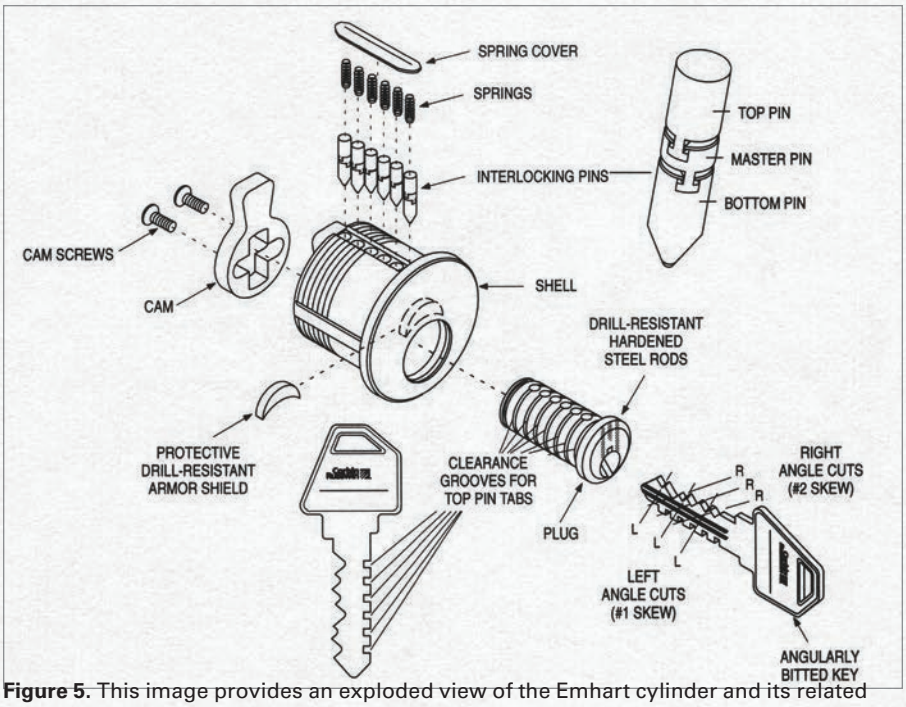


Figure 5. This image provides an exploded view of the Emhart cylinder and its related components.

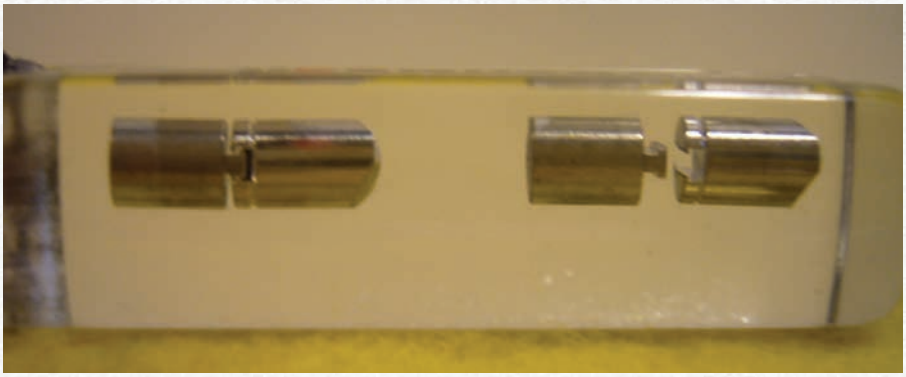


Figure 6. Encased in Lucite, this sample demonstrates how the Emhart interlocking pins work.

Holding PLC. In 2000, ASSA ABLOY AB of Sweden acquired Corbin Russwin as well as the Yale Security Group, under which Corbin Russwin operated.

Emhart?

Way back when, this small company known as Corbin had an employee named Walter Surko, who patented a cylinder with the Emhart name on it. If you are one to look up patents, it's U.S. Patent #4,103,526. It had a few attributes: It was one of the first "high security" systems back then to offer its customers what was then considered an economical choice. It also claimed that it was the first high security system that could be integrated with conventional cylinders within the same master key system. *Wow!* But all was not well within that world. A lawsuit was initiated against Emhart. More on that later.

The Corbin Russwin Cylinder Manual

This is one of the very few technical manuals that should be in the hands of every locksmith, especially those working with Corbin Russwin products. It is a treasure trove of vital information that was expertly assembled many years ago.

It was a joint venture by Corbin Russwin employees, such as Glenn Fortin and others, but included the esteemed Jerome Andrews, AJ Hoffman and Gerry McNickle for their sections on master ring cylinders, interchangeable core and master ring cylinders. The images and exploded views were created by Corbin Russwin, but their joint technical expertise included in this manual is priceless. Read through and study it, and appreciate its greatness. The CorbinRusswin Cylinder Manual (online: pages 41-45 for Emhart) can be accessed here for your perusal: https://bit.ly/3oEREAo.

Technical Data: Product Basics

The Corbin Russwin Emhart security cylinders are all 6-pin and are UL listed (with the exception of the Emhart IC). As stated earlier, the original cylinder

was invented/patented by Walter Surko and first produced in 1978, manufactured under the Emhart name. It was unique in that it was the first high security cylinder that could be integrated into a conventional system or into an interchangeable core master keyed system. It was highly pick resistant, as well as bump resistant with excellent key control potential.

Prior to Corbin Russwin Pyramid, Emhart was referred to as "High Security." To eliminate product confusion, it was later referred to as "Security" when Pyramid became its "High Security" product. That remained until the advent of CorbinRusswin Access3, Corbin Russwin's newest high security system. *Figure 5* delineates the Emhart Security Cylinder.

Emhart Interlocking Pins

The Emhart interlocking pins (aka Security Pins) were created to provide a true deterrent to lock manipulation. As the key is inserted, the pins twist and unlock to allow the proper shear line to be created. When combinating, the pins are first assembled into a single unit for that particular chamber and carefully top loaded into that chamber.

Notice the small T-shaped protrusion at the bottom of both the top pins and master pins. Plug followers cannot be used, as the T-projection will ride below the shear line into a groove cut at each chamber.

Figure 6 offers a real-world look at the interlocking pins. For a demo sample, Emhart placed the interlocking pins embedded forever in Lucite. Notice the "combined unit" as opposed to the "unlocked pins." It's a great visual presentation.

Emhart Security Pins

The security pins include two top pins, three master pins and five bottom pins. There are five lengths of bottom pins that translate into five possible key cuts. Note: There exists no #1 pin/cut.

Emhart Security Pin Lengths	
TOP:	#1 = .193"
	#2 = .158"
MASTER:	#2 = .097"
	#3 = .125"
	#4 = .153"
BOTTOM:	#2 = .242"
	#3 = .270"
	#4 = .298"
	#5 = .326"
	#6 = .354"

Figure 7. This chart lists the Emhart pins with dimensions.

Bottom pins have only two possible angles (unlike Medeco): left or right. The left angle is known as the #1 skew. The right angle is the #2 skew.

Because the top and master pins have the T-projection but fit into the corresponding pin, the total pin stack dimension (interlocked) will be less than the sum of the individual pins. They are listed in *Figure 7.*

Bottom pins have a groove (or notch) at the top/side for either the left or right side, thus there are two versions of the five bottom pins, allowing for 10 possible bottom pins. They interlock with the master pins.

Master pins have the extended T-projection at their bottom to connect to the bottom pin (when rotated) and they also have a groove at the top for connection to the top pin. The master pins are made in three versions, with a left, right or straight groove (or "same" groove). With three depths available, there are nine possible master pins to choose from (3x3).

Top pins also have the extended T-projection and will rotate and connect into the master pin. There are only two possible top pins. The angles of cuts are irrelevant to selection and use with the two top pins.

As a rule, the angle of the bottom pin will match the angle of the key cut. But

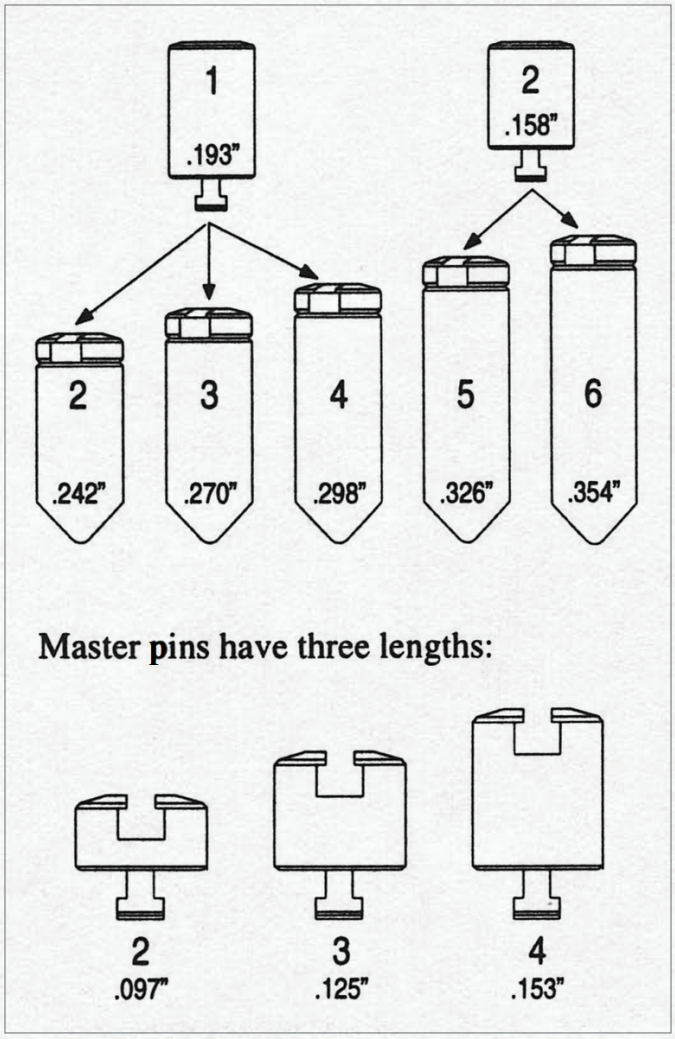


Figure 8. This visual shows how the Emhart interlocking pins work together.

Figure 9. Here is the cover of the Emhart pin kit.

Figure 10. Take a peek inside the Emhart pin kit.

the rules change when combinating a master-keyed system, as discussed later. *Figure 8* is a good visual on this topic.

It's also important to note that there exists no zero-bitted Emhart cylinders. That is simply because there exists no Emhart pin that will meet the plug shear line with an Emhart blank inserted.

Non-Uniform Pin Stacks

As in some other security cylinders, there exists no uniform pin stack total. That is, measurement-wise, if we measured the pin stacks from tip of the bottom pin to the top of the top pin, none of the stacks in the cylinder will meet a uniform measured distance.

Chambers using the #2, #3 or #4 interlocking bottom pins with their appropriate master pin will reach a total pin stack height of .588". This is not in their interlocked state. This measurement includes the "T" projection. When interlocked, the stack will be smaller in size, but still the same total length.

This fact is not true of the #5 and #6 interlocking bottom pins. Because the #2 top pin is less in height than the #1 top pin, the pin stacks (with master pin) will both be lower in height than bottom pin stacks #1 through #4, and both will be different in height.

Master pins would not be necessary with bottom pins #5 and #6 since the combined numerical value would be at least a seven, which would be incompatible with the incremental key cutting range of 2-6. If you are visually reading the master pins, hold the pin so that the T-projection is horizontal. The angled groove will then be left (#1 skew), right (#2 skew) or straight (#3 skew).

Emhart Dedicated Pin Kit

If you will be (or are) working with the Emhart system, the dedicated pin kit is necessary. The Emhart Pin Kit (PK-70-HS, 14" x 8" x 2") provides all of these high security

Figure 11. This image reinforces how the Emhart pins are placed within the pin kit.

pins. Additionally, it can also be used for the CorbinRusswin Blockout Function Cylinders and their Brink Function Cylinders. At this time, there is no aftermarket kit of this type. *Figure 9* illustrates the cover, and *Figure 10* shows the contents.

Take a look at how the pins are situated, especially the bottom pins. This will visually reinforce the importance of understanding the skews, as depicted in *Figure 11*.

Emhart Security Keys and Depths

Since the Emhart security cylinders use the System 70 depths, one would expect six depths. However, only five depths are usable. This is because the System 70 shallowest #1 cut removes almost no key material. This would not allow the chisel-pointed bottom pin enough room to be seated properly and allow for positive rotation. Thus, only five depths are used. Since the security plugs accommodate five depths, bottom pins also have five increments. The special connecting top pins, however, only have two lengths and are selected based on bottom pin size (or BP + MP). Again, master pins have three lengths.

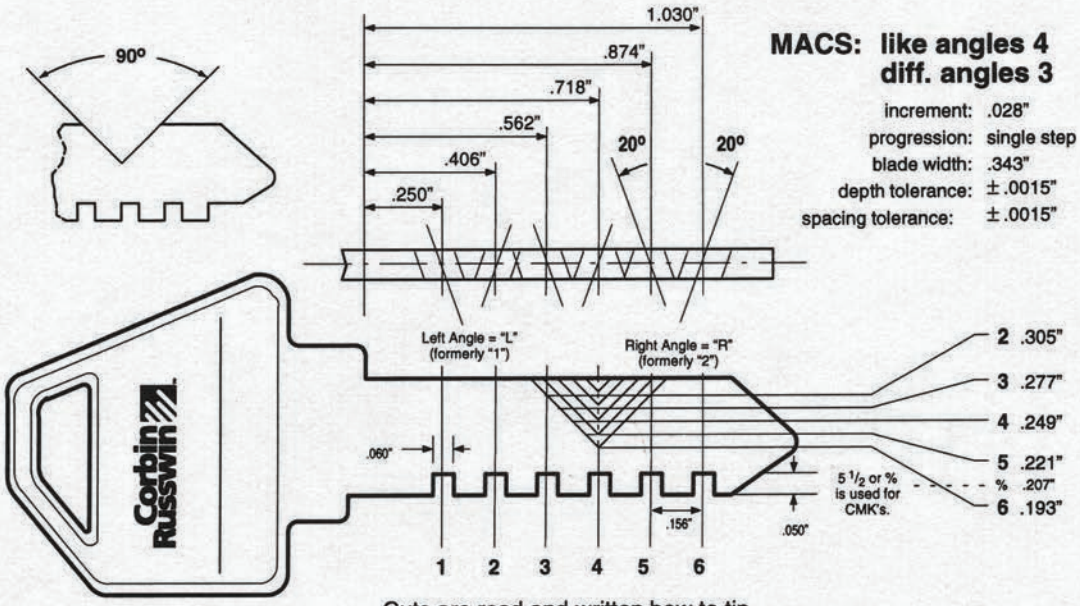
The bitting angles (skews) are cut 20° from the perpendicular. There is no center cut. Therefore, each cut angle is either 20° to the left or 20° to the right. This is similar in concept to the Medeco rotating bottom pins.

The keys have small wards cut beneath the blade under each position to allow clearance for the top pin tab projections. Notice the unique Emhart bow shape that makes key identification simple. The cylinder plug also has wards around each chamber to acquiesce to the movement of the top pin tabs. The exploded view of the Security Mortise Cylinder illustrates this construction feature in *Figure 5*.

Note: High Security key cuts are .006" deeper than standard System 70 cuts. This is because the blunt bottom pin tips cannot

High Security - Z and DH Class, System 70 Only

Applies to these keyways:	60	59A1	59B1	59C1	59D1	D1 thru D4	and restricted keyways not published for security reasons	HPC Code Card (C)X1 with cutter CW1013
	70	59A2	59B2	59C2	59D2	H1 thru H8 L1 thru L4		



MACS: like angles 4
diff. angles 3

increment: .028"
progression: single step
blade width: .343"
depth tolerance: ±.0015"
spacing tolerance: ±.0015"

Cuts are read and written bow to tip.
Suffix angle to depth: 2L 3L 4R 6L 3R 2R
Originally written either as $2_1 3_1 4_2 6_1 3_2 2_2$ or 2(1) 3(1) 4(2) 6(1) 3(2) 2(2).

High Security Pins

The last 3 digits of the part number are the pin length, in thousandths of an inch, including the tab:

Bottom Pins

New	Old	Order Pin #
2L	2_1	407T41-4242
2R	2_2	407T42-4242
3L	3_1	407T41-4270
3R	3_2	407T42-4270
4L	4_1	407T41-4298
4R	4_2	407T42-4298
5L	5_1	407T41-4326
5R	5_2	407T42-4326
6L	6_1	407T41-4354
6R	6_2	407T42-4354

Master Pins

New	Old	Order Pin #
2L	2_1	407T31-4097
2R	2_2	407T32-4097
2S	2_3	407T33-4097
3L	3_1	407T31-4125
3R	3_2	407T32-4125
3S	3_3	407T33-4125
4L	4_1	407T31-4153
4R	4_2	407T32-4153
4S	4_3	407T33-4153

Top

Size	Order Pin #
1	407T43-4193
2	407T43-4158

Springs

Type	Number
Control Chambers	172F21-7
All Others	603F20-7

Conventional Pins (1993 Consolidation)

For control chambers of high security IC and 6th chamber of Blockout and Brink function:

Bottom Pins		Build-Up Pins		Master Pins		IC Top Pins	
2	.231"	-4	.030"	1	.028"	2	.198"
3	.260"	-3	.058"	2	.056"	3	.171"
4	.288"	-2	.087"	3	.084"	4	.142"
5	.316"	-1	.114"	4	.112"	5	.114"
6	.344"	0	.142"			6	.087"
		+1	.171"				
		+2	.198"				
		+3	.226"				
		+4	.253"				

Top pin for 6th chamber of Blockout and Brink function cylinders: .171"

Figure 12. Here are the key cut specifications for the Emhart system.

be seated in the V-shaped security root cuts. This difference allows the security cylinders to be integrated into the same keying system as conventional cylinders.

Figure 12 illuminates the key bitting specifications for this product.

Key Gauge

CorbinRusswin never manufactured a separate key gauge for its Emhart product. But don't let that stop you.

Use a standard Corbin or Russwin System 70 depth key gauge that you can modify (*Figure 13*). Have a key (or keys) that accurately contain each of the five cuts. Label with a fine-point marker and add the depths to your gauge. Remember that the Emhart keys will have the cut-out (for the groove) at the bottom of the blade.

Emhart Interchangeable Core

The Emhart Security I-Core is available in System 70 Series and in the Z and DH class keyways, including: 59 Series, 60 Series, 70 Series, D Series, H Series and L Series.

From the diagram shown in *Figure 14*, you can see that this Emhart Security I-Core has the following properties:

- only two control chambers (second and third chambers)
- does not use the security interlocking pins within the two control chambers (positions #2 and #3)
- has a .552" diameter plug (as opposed to .509" conventional plug)
- uses angled security pins in *non-control* chambers only
- must be top loaded (no other way to pin cylinder)
- Use different springs for CTRL chambers
- CTRL key must be same as TMK in non-CTRL chambers

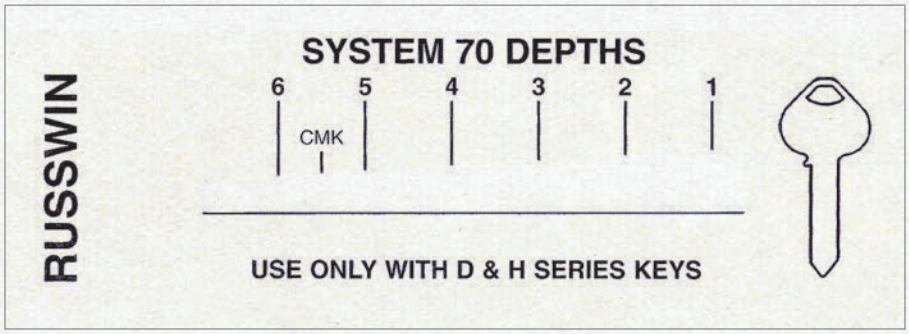


Figure 13. The basic Russwin key gauge can be transformed into an Emhart key gauge.

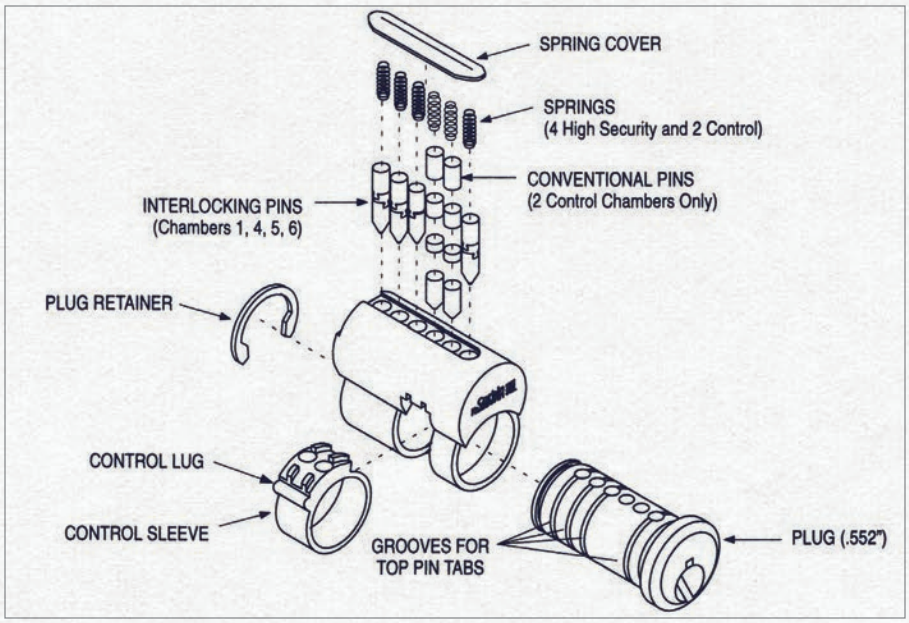


Figure 14. This image provides an exploded view of the Emhart interchangeable core.

3L 1R 2L 5R 4L 5R
or
3(1) 1(2) 2(1) 5(2) 4(1) 5(2)
or
3_1 1_2 2_1 5_2 4_1 5_2

Figure 15. This is an example of how Emhart bittings can be written.

The key cuts are designated by left or right (although factory nomenclature uses 1 for left and 2 for right). Sometimes a numerical notation will exist on bitting lists with either numbers and letters or all numbers. *Figure 15* shows three examples showing the same bitting.

The PK-70-HS pin kit is labeled by method number two as shown, as would many computer-generated bitting lists.

Emhart Security Key Identification

With the purchase of a factory system, key tags were issued with a code that includes three numbers and five letters to

226 = 59A	244-291 = Restricted	316 = H8
227 = 59AB	292 = 70	317 = H12
228 = 59AC	293 = Restricted	318 = H34
229 = 59AD	300 = D1	319 = H41
230 = 59A1	301 = D2	320 = H56
231 = 59A2	302 = D3	321 = H61
232 = 59B	303 = D4	322 = H78
233 = 59BD	304 = D12	323 = H83
234 = 59B1	305 = D34	324 = H85
235 = 59B2	306 = D41	325-341 = Restricted
236 = 59C	308 = H81	551 = L2
237 = 59CD	309 = H1	556 = L1
238 = 59C1	310 = H2	557 = L3
239 = 59C2	311 = H3	558 = L4
240 = 59D	312 = H4	559 = L12
241 = 59D1	313 = H5	560 = L34
242 = 59D2	314 = H6	561 = L41
243 = 60	315 = H7	

Figure 16. A listing of the Emhart security keyway prefixes is shown.

designate both the keyway and the cuts/angles of the key. An example would be: 234 BZYXP. A listing of the Emhart security keyway prefixes for reference is shown in *Figure 16*.

Master Keying the Emhart Security IC

Since most institutions that use the Emhart system will inevitably use the Emhart Interchangeable Core, here are the certain conditions that should exist in a master-keyed system using the Emhart IC:

- Chambers #2 and #3 are the control chambers for the Emhart IC.
- Convention pins (*not* interlocking pins) are used in the two control chambers.
- There exists *no* #1 depth in Emhart security keys.
- MACS = 4 *when* adjacent cuts have the *same* angle.
- MACS = 3 *when* adjacent cuts have *opposing* angles.
- There exists *no* #1 master pin (all CKs must be at least two steps from TMK, though they may vary by one step from each other).
- Angles can be mixed within same chamber (with all Emhart security cylinders) as well as mixing same depths.
- Mixing Emhart security and conventional IC must be planned at system inception (conventional pins cannot differentiate angles of the security keys).

Combinating Procedure for the Emhart Security IC

Combinating or recombinating the Emhart cylinders — including the IC — is not difficult, especially if you are familiar with the CorbinRusswin Conventional Cylinders and ICs. Always refer to the CorbinRusswin Cylinder Manual (online: pages 41-45) for more details. It's available at this link: https://bit.ly/3oRoRbY.

1) Chart out the bittings by numbers, so all the math and paperwork are done at the same time in advance.

2) Check your pin kit(s). If your pin kit does not support the numerical system described within, convert the thousands of an inch measurement into whole numbers to combinate. This, too, can be done on paper before actually beginning to combinate. The pin kit for the Corbin Russwin Emhart Cylinders is PK-70-HS.

3) Select the correct pins and lay them out on a pinning tray. *Do not* use a plug follower! The tab on the top pin rides on the groove of the plug that extends below the plug shear line in each pin chamber. Top load only. Place an alignment tool (or small drill bit) into one of the rear chambers so the core is positioned to receive the pins.

4) Start with chamber 1 closest to the keyway entrance. Interlock the pin stack in your fingers and carefully lower the stack into the chamber.

5) For chambers 2 and 3, since they are conventional pins (control chambers), load each pin separately from bottom pin to top pin for the two chambers.

6) Complete combinating the I-Core as in step four.

7) After all chambers are top loaded, you may apply a small amount of Teflon powder into the keyway, as per the manufacturer's recommendation.

8) Insert all springs and hold with a finger to test with the keys.

9) After all keys work properly, cover chambers with the spring cover and carefully stake on the cover by wedging it into the dovetail slot.

The Lawsuit

As you may have surmised at this point, there are certain similar characteristics comparing the Emhart Interlocking Pins with the Medeco Angled Rotating Pins. Medeco was keenly aware of this and filed a lawsuit against Corbin Russwin in 1975 for patent infringement. They claimed that the Emhart axial rotation design infringed on Medeco's existing patents. The case was settled two years later. The result was that Corbin Russwin was ordered to pay royalties to Medeco on each Emhart cylinder sold until Medeco's patent expired in 1987.

Some feel that Corbin Russwin should have more fervently argued that the Interlocking Pins were what made Emhart stand out from the Medeco Rotating Pins. This, they feel, may have averted the lawsuit from ultimately favoring Medeco's position. Hindsight, whether accurate or not, is still 20/20.

Lessening Security

We have all heard about locksmiths that replace security pins with non-security pins for a variety of reasons. Certainly standard .115" pins can replace all the Emhart pins in an Emhart cylinder. Then both the Emhart keys and standard Corbin Russwin keys (or aftermarkets) of the same keyway could operate that cylinder. But why?

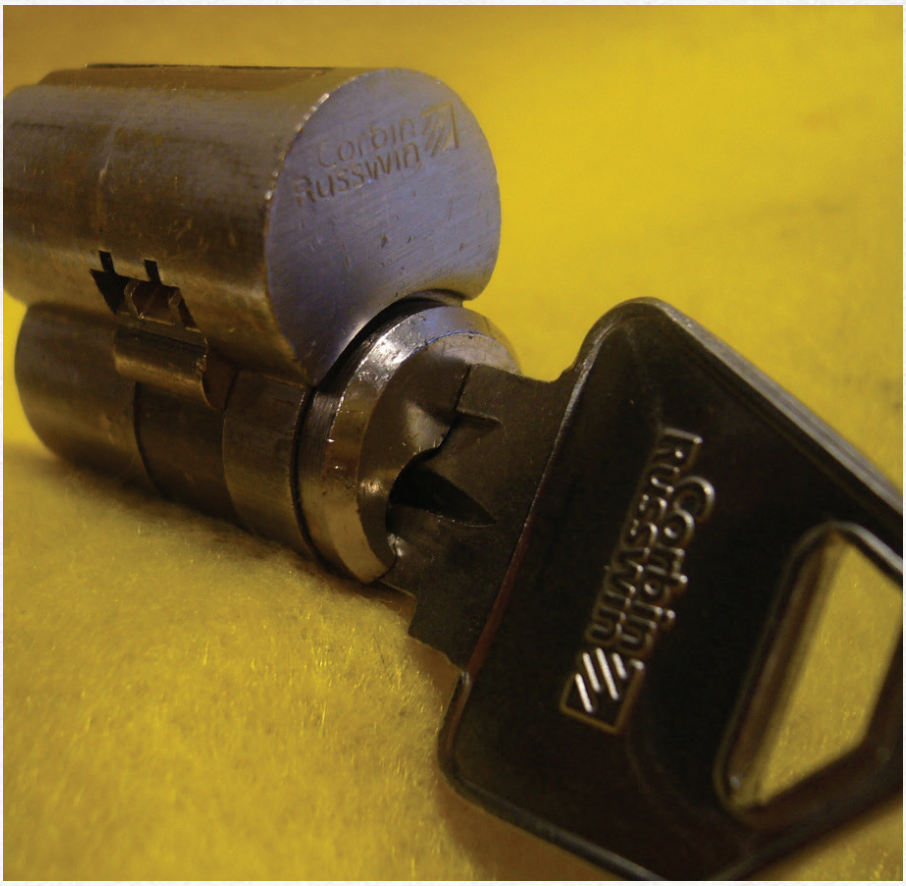


Figure 17. Here is an image of the Emhart IC with key inserted; note the location of the two control chambers.

"Decommissioning" a cylinder, as I call it, does have potential consequences. There are times when areas such as an often-used conference room, broom closet or staff workroom holds little of value to protect. Not so with an entrance door, a dispensary containing narcotics or a storage room for computers and other valuables. Judgment calls need to be made. It's usually best to maintain the entire system as originally intentioned to lessen any type of possible security breach.

Conclusions

Corbin Russwin Emhart has had a long ride, although with some bumps in the road. It remains a security system with good key control, pick resistance and bump resistance. If your job location changes and you find yourself inheriting an Emhart system, you can now tackle the job with unbounded confidence. Knowledge is power.

William M. Lynk, CML, CPS, M.Ed., has been a locksmith since 1975 and is the owner of www.ICLSglobal.com. Bill is an IC specialist, an industry author, the subject matter expert on IC for ALOA, and an ALOA ACE instructor, teaching classes on interchangeable cores and master keying across the country. He has originated SFIC Technical Manuals for both national and international lock manufacturers, and maintains a working relationship with the major lock and security manufacturers throughout the world. In 2013 and 2015, he was named *Keynotes* Author of the Year.

Minimalist MASTER KEYING

Using fewer master pins makes a system more secure.

By Ralph Forrest-Ball

MASTER KEYING HAS BEEN DESCRIBED AS THE CAREFUL DESTRUCTION of security. Actually, master keying has several advantages, such as limiting the damage caused by lost or stolen keys. The trick is to find the right balance between the advantages and disadvantages. Generally speaking, more master pins means more vulnerability, and fewer master pins means less vulnerability. First, let's talk about the problem, and then I'll share three examples of minimalist master keying.

For pin-tumbler locks, the most common technique of master keying is "split-pin master keying," which involves putting master pins between the bottom pins and driver pins. Using master pins in more than one chamber almost always leads to "incidental" keys. Incidental keys work because each of their cuts is identical to a corresponding cut on one of the operating keys for that lock. As a simple illustration, imagine a lock that is pinned to work with the keys 333333 and 555555. A key cut to 333555, or 353553, or any combination of 3s and 5s, will automatically operate that lock.

This is both a blessing and a curse. The upside is that we can take advantage of the incidental master keys to create three-level master key systems (change keys, master keys and grand master key) without adding any extra master pins. A lock that is pinned to the change key and grand master key automatically works with the incidental master key. The downside is that all those incidental keys are vulnerabilities for possible key interchange.

Key interchange is when a key operates a lock it wasn't intended to. There are basically three ways this can happen. First, a random outside key might operate one of our locks because it just happens to be identical to that change key, a master key or one of the incidental keys for that lock.

Second, the lock could be manipulated by wiggling or jiggling the key. This typically happens when the offending key is deeper, in every position, than one of the operating keys. A bump key is an example of manipulation.

Third, and most serious, is when a key from somewhere in our system operates a lock in our system that it was not intended to operate. A well-designed and properly implemented master key system should have no internal key interchange. But you can never completely eliminate the risk of outside keys and manipulation.

So, how do we fight back? The way to reduce the risk is to use fewer master pins. In the example above, all three keys have a 3 cut in the first position. Where the change key is the same as the top master key, that's called a constant. The lock has no master pins in that chamber. Constants are good. Constants are your friends. ANSI/BHMA A156.28 (the industry standard for master keying) says we should use as many constants as possible to get the fewest master pins per cylinder, which minimizes the incidental keys. Typically, adding one more constant reduces the risk of key interchange by half. I'll show you some examples with very few master pins, or none at all.

Three Examples of Minimalist Master Keying

Example #1: Warehouse. Chris and Dana Thompson own a small business with six employees. Typically, the manager unlocks the building in the mornings, and the assistant manager locks up at night. The other four employees don't have keys to the building. The problem is that, sometimes, an employee needs access to the warehouse early in the morning. But the owners don't want the employee to have access to the business office, where confidential records are kept. They have asked us if we can make a key that only opens the warehouse, not the business office. The locks are

commercial grade six-pin Sargent, LA keyway, with a MACS of 7.

This might be the simplest possible master key system: one master key and one change key. The manager and assistant manager will carry the AA master key. All other employees will carry the 1AA change key. The warehouse locks will be combinated to 1AA and the master. The office lock will be combinated to the AA master only. Examples like this are rarely discussed in books about master keying. But, in my experience, these tiny systems make up roughly half of all the master keying requests I've ever received.

How not to do it. Too often, I've seen systems like this built with two-step progression and master pins in every chamber (total position progression). Here's what the key bitting array (KBA) might look like using 345612 for our master key AA.

345612
567834
789056
901278
123490
FEDABC

This KBA gives us 4,096 possible change keys. *But we only need one!* Suppose we used this KBA and picked a key near the middle of the first page, such as 567256. Here's what its pinning chart looks like:

222442
345212

With master pins in every chamber, this lock would be operated by a whopping 64 keys. One of them is our master key, one is our change key and the other 62 are incidental keys. Every incidental key represents a vulnerability. This is totally unnecessary.

Here is a better idea: use limited progression, where at least one chamber is a constant. In fact, we only need a master pin in a single chamber. We can have five constants in our six-pin locks. Let's use 345612 for the master key AA. Where should we put the constants, and which chamber will we progress? I'll pick the fourth chamber. This gives us the following key bitting array:

345612
. . . 8 . .
. . . 0 . .
. . . 2 . .
. . . 4 . .
xxxAxx

This KBA produces just four change keys.

345812
~~345012~~ (MACS)
345212 1AA
345412

I chose 345212 for our 1AA change key. I like that choice because it uses a #4 master pin, which is more reliable than a #2 master pin. You might be wondering why 345012 is crossed out. With Sargent, 0 means "10." That key has a 10 next to a one, which exceeds the MACS of 7. Here's our pinning chart for the 1AA warehouse locks:

. . . 4 . .
345212

There are exactly two keys that operate this lock: 345612 and 345212. One of them is our AA master key, and the other is our 1AA change key. We have no incidental keys at all. And the AA office lock, which only operates with AA, doesn't need any master pins at all. That's beautiful. Constants are your friends.

Let's talk about what happens three months or three years from now when they lose a key or fire an employee. If that employee carried the 1AA key, we only need to change the warehouse locks to a new 2AA change key. The AA key can stay the same. We still have two more keys left from our progression list. And, if we use those up, we can get more by simply moving the constants. Our limited progression system becomes a rotating constant system. Each time you rotate, you get four more possible change keys, and there are six ways to do it. That's 24 keys. It might be decades before we run out, if ever.

Example #2: Community Center. The Sandford Community Center has around 40 volunteers led by a coordinator and a six-member board of trustees. On any given Saturday, a few of the board members show up around 7 a.m. to unlock the building and get things ready. All of them carry a key that operates all the locks on the building, except for the coordinator's office. Does the coordinator need to carry two keys? The locks on the building are Schlage 6-pin C keyway.

Here's a case where we can apply the technique of sectional master keying. We'll replace the cylinder on the coordinator's office with a Schlage Primus XP, CP keyway. Primus CP keys will slide into a C keyway lock, but not vice versa. The Primus key will be our master, and the change key will be an ordinary Schlage SC4. The beauty of this plan is that *none of these locks will have*

any master pins at all, because the master key and the change key will have the exact same bitting, just on different blanks.

There are numerous examples where more than one key section will fit into a keyway. Often, they are designed specifically for that purpose, and they're known as multiplex keyways. For example, you might have a master keyed building with Yale GA keyway and another building with Yale GB keyway, with identical key bittings in both systems. The GA keys won't fit the GB locks and the GB keys won't fit the GA locks, but a Yale GV key will fit them both. If you copy either the GA or GB master onto a GV blank, voila: You have the grand master key.

Our community center example is a little different, because the Primus CP was designed to fit into the C keyway to provide key control for existing systems, not for sectional master keying. But it works for this situation. Even better, the fact that Primus XP keys are patented and restricted helps to mitigate two problems. First, a danger with sectional master keying is that a holder of a low-level key might get their key copied onto a higher-level blank, which effectively elevates the key. Primus XP keys are patented and restricted, which makes such an elevation much less likely. Second, using a restricted key makes the system harder to hack. Hacking is an unavoidable vulnerability of split-pin master keying. Essentially, every lock that operates with the master key contains the information about what cuts are on the master key. It's even possible to decode the lock without disassembling it if you have a code machine and a supply of key blanks. Restricted key blanks are harder to get, which makes hacking less likely.

One downside of this plan for the Sandford Community Center is that when a change key is lost or stolen, rekeying won't be as simple as choosing the next change key bitting from a progression list. In this case, when we choose a new change key bitting, the master key bitting must change with it. That means cutting all new keys. Nothing is perfect. Remember, master keying is all about weighing the advantages and disadvantages.

Example #3: Apartment Building. The owners of Oak Winds Apartments have called us to schedule a rekey of a dozen apartments (in preparation for the next college term) and because their gate lock keeps jamming. Naturally, our first reaction is to be cautious and curious, because residences usually shouldn't be master keyed.

The advantages of master keying in residences are usually outweighed by the disadvantages. First, the locks tend to be residential grade five-pin, which aren't terribly secure to begin with. Then we decrease the physical security even more by putting in master pins. Even worse is the possibility of hacking the system. Tenants have access to their own change keys and their own locks, which contain all the information about the bitting of the master key. And the stakes are higher with residences than with businesses. A lawsuit involving stolen office equipment could be in the thousands. A lawsuit involving the death of a human being could be in the millions. Considering all this, it makes us wonder why they decided to master key the building at all.

Despite the downsides, the owners of this 30-unit building are concerned that there might be an emergency, such as a leaking water pipe, that would require access to any apartment at any time. They are convinced that a master key system is the way to prepare for such emergencies. We ask to see the master key system records to find out just how bad the situation is.

All they have are invoices showing dollar amounts charged by various locksmiths over the years. They don't have a bitting list. We ask to see what keys they have. They produce a master key and a handful of change keys. The master is a Kwikset key stamped "MASTER" on one side and "DO NOT DUPLICATE" on the other. The change keys appear to be factory original keys. This is looking worse by the minute. Nine times out of 10, a master key system with factory original keys is a "shoebox" system. We use a key gauge to decode the keys, make a list and mark the constants with a yellow highlighter. Here are the results:

master 56656
change 43251
change 42412
change 36411
change 15233
change 23646

The fact that the constants move around is not a problem. That's a normal feature of a rotating constant system. The real problem is that some of the keys have no constants, some have one and one has two constants. Normally, all the change keys in a system should have the same number of constants. We can conclude this is indeed a shoebox system. That explains the fluctuating constants. It also explains why they have no bitting list. Shoeboxing doesn't need any paperwork at all; that's one of the reasons amateur locksmiths like it.

Unfortunately, shoeboxing uses more master pins than necessary, and it relies on luck to avoid key interchange. That's why it's expressly forbidden by ANSI/BHMA A156.28. With a system of 30 keys, the chances are very high that they already have key interchange; they just haven't noticed it yet. We really should rekey this entire building. If we are working with a blank slate, what kind of system could we create?

First, we need to have a conversation with the customer about DND keys. Stamping an ordinary unrestricted key "DO NOT DUPLICATE" is deceptive because it gives a false sense of security. If they really want key control with keys that can't easily be copied, they need restricted keys. That generally means upgrading from residential five-pin locks to commercial-grade six-pin, which will accommodate restricted cylinders. Even if they don't really need key control, upgrading is still a good idea. Fewer people carry six-pin keys, so there's less risk of external key interchange. And six pins could allow us to get more change keys or an extra constant. We might convince the owners to spend the money by pointing out that this is an opportunity to upgrade from knobs to levers to meet ADA standards. In any case, we really want to have this conversation before all the locks have been pinned, while it's not too late to do something about it.

Figure 1. Unfortunately, shoeboxing uses more master pins than necessary, and it relies on luck to avoid key interchange.

A Better Solution

Now consider system design. We might suggest a rotating constant system with just two progressed chambers and all the others constant. With two-step progression, four constants and two progressed chambers gives us 15 ways to rearrange the constants, each of which provides up to 16 change keys. That's 240 keys — enough to rekey each unit eight times (minus MACS violations, of course). That should be enough to last for a couple decades. And we'd only need two master pins per lock, which is about half what they have now. That would be a huge improvement; it cuts the total number of incidental keys by about a factor of four. But I have an even better suggestion.

Let's single-key each apartment, with no master pins in any of the locks. To reassure the owners of the building, we put one copy of each key into a key box in the basement, secured with a lock of a different brand, such as Medeco. Whoever carries that Medeco key can access any apartment at any time, for emergencies. They just go to the basement, unlock the box, and take the appropriate key off the hook. Even better, secure the key box with an electronic lock that has an audit trail. Give a different access code for each person who would otherwise carry a master key. That way, there's a record of who accessed the box and when they did it.

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 would be no more vulnerable to picking or bumping than any other single-keyed lock. This is a great option, especially if we can't convince them to upgrade the hardware.

But here's one more issue to address: There is a gate at the back of the building. Tenants use the gate to get to and from the side street. But some other people, who don't even live there, have been using that gate as a shortcut. The owners wanted to discourage non-residents from using the gate, so they put a lock on the gate and pinned it to operate with all the tenants' keys. This is known as "maison keying." Now we understand why they said the lock keeps jamming. It has stacks of #1 master pins in every chamber. Within a week, the lock was jammed, so residents started propping the gate open, which defeats the purpose of having the gate at all.

Is there a way we can we accommodate this request? And can we do it without using master pins? I'll give you my answer in part two of this article series. I'll also show you an example of selective master keying, which allows us to create small master key systems with hardly any master pins.

Ralph Forrest-Ball was a math teacher for 12 years before becoming a full-time locksmith. He joined ALOA in 1997 and earned the CML credential in 2009. 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 currently works part-time as a locksmith in Corvallis, OR.

Institutions and Incompatible Hardware

Sal Dulcamaro discusses how the diverse array of door hardware can be problematic at institutions.

Institutions come in various sizes and are sometimes constructed in phases. A hospital or school will sometimes start out relatively small and later greatly expand in size. These expansions sometimes happen fairly quickly, while some take years. If the expansion was pre-planned, the hardware is often designated in advance to be compatible (and the same) as the hardware used originally. Depending on who orders the hardware, it could be different to save money or because the decision maker has an existing business relationship with someone who represents a different brand of hardware. Often, the choice is to give the contract to that person's company.

At the hospital where I worked, the original buildings were constructed in 1955, with other buildings added later. Although not always, institutions often use Grade 1 hardware because of the likely heavy use or abuse by the public.

Although BEST hardware is the usual standard, what's used in the oldest buildings of the hospital is Russwin Grade 1 key-in-knob hardware. The Medical Office Building (MOB) is one of the original buildings, and although most of the office doors now have BEST IC door hardware, a good number still have Russwin Grade 1 knob locks. The one difference with the Russwin hardware in the MOB is that virtually all the Russwin Grade 1 knobs have the outer knob modified with a Russwin-built knob that instead accepts a BEST interchangeable core.

So, except for the few Russwin Grade 1 key-in-knob locks, the hospital uses a BEST master key system where one BEST Top Master Key (TMK) opens virtually all the doors in the main hospital and adjoining buildings.

There are many brands of door hardware that are fully compatible with a BEST master key system. It isn't necessary to have all the same brand of door hardware to maintain a BEST master key system. Consequently, the south tower addition in 2004 was built using Schlage Grade 1 lever handles that accepted SFIC lock cylinders.

Although most of the doors in the rest of the hospital use BEST Grade 1 hardware, using Schlage hardware in the south tower had a consequence unrelated to the

master key system. A commercial locksmith company can't possibly stock every possible brand of hardware that customers might use. If a commercial locksmith needs to replace a broken lock, it would be relatively lucky to have the exact lock in the right grade and finish. Now, if we are talking about residential and you stock some Kwikset and Schlage door hardware, there's a pretty good chance you might have the exact replacement since those two brands cover most locks you'll find in a residential setting.

A great number of commercial doors have locks that use the Schlage C keyway, though a large percentage will be a brand other than Schlage. If you need an exact match for your residential or commercial customer and your hardware supplier is both open and nearby, you can usually handle the job. If you have good relationships with other locksmiths in your area, you can sometime get the necessary lock or lock parts from them. Otherwise, you either can persuade the customer to use a brand that you have in stock or temporarily install a loaner lock on the door and tell them you'll get the exact part as soon as possible from your supplier.

A Different World

Institutional locksmiths work in a different world. You mostly know what kind of hardware is in the buildings you're responsible for. A smartly run institution will minimize the variety of brands and types of hardware used in their buildings. While Grade 1 hardware is built to handle considerable abuse without failing, even very heavy-duty door hardware breaks down and fails.

There are literally thousands of doors and locks in the hospital. You must be prepared with the correct locks or parts to get the door back in service when something breaks. Consequently, you must stay well stocked. While it's theoretically possible that half the locks could break on the same day, the odds are highly unlikely. We never stocked thousands of any lock or part. If you've done your job for a reasonable amount of time, you have a fairly good idea of how many of each kind of lock you might replace in a week or month, and your stocking numbers should reflect that.

> **"Although not always, institutions often use Grade 1 hardware because of the likely heavy use or abuse by the public."**

If your supplier ships quickly, your stock can be smaller. There are certain brands or certain types of locks (or parts) that take considerable time for delivery, and those must be ordered and stocked appropriately to keep yourself out of trouble. If an item takes 10 weeks for delivery, you need to keep the equivalent of a two month's supply for that item. If you can get the item in three days, having less than a month's supply might be OK.

If the price per item is the same when you order one or 25, there's no need to keep a year's worth of that item on your shelves. However, if there is a special sale or quantity discount, you may want to order larger quantities at times. The main thing is to have the part on your shelf when you need it. The disadvantage of having different brands is that you need to stock the same grade and function (in many cases) to replace a lock in a different building — meaning you must stock more hardware than if they were all the same brand.

Dealing With Replacements

For a long time, I would have to stock Schlage locks for the south tower. Initially, the main reason was that Grade 1 Schlage and BEST lever handle locks had slightly different spacing for the auxiliary mounting holes above and below the main cross bore hole. You can't just pull off the Schlage lock and replace it with a BEST equivalent. You would need to re-drill the auxiliary holes to adapt to the different spacing, and then you could install the BEST lock. Cordless drills are very handy. I eventually started bringing my cordless drill and a small jig to the job, and then I could replace a Schlage lever handle lock with a BEST lever handle lock.

The hospital was vast, and I hadn't been in every corner or corridor to know absolutely all the hardware used. There were surprises here and there. There were thousands of lockers throughout the hospital. All the locker combination locks were Master brand, so it wasn't that difficult to stock those locks. There were about five different versions of the actual locks. There was just one tricky element: You need a bypass key to open a locker lock if you don't know the combination. That same bypass key is also used to reset a combination. It seems that they originally had a person who'd coordinate ordering new lockers and locker locks. They wanted to order new lockers with the same bypass key as the one originally ordered. By the time that I was responsible for servicing the lockers, I think they were already using about 15 different bypass/change keys. It was too late to overcome that issue. But I did ensure that when I ordered replacement locker locks, I had them factory ordered with the original bypass/change key lock cylinders in the dial.

As with other parts I needed to order,

I had to keep an eye on my stock to make sure the quantities didn't drop too low. I knew that it sometimes took one and two months to factory order, so when I got to 10 or fewer in stock, I'd order a case of 25 to make sure I had them in time.

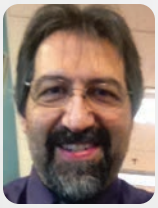
An institutional locksmith must live with the situation that he or she inherits. Unless you can influence hardware choices before the buildings are constructed, you must deal with the hardware previously selected. The ideal situation is consistent brand or product throughout facilities. Obviously, you hope that the brand or product you chose is either the best or of better quality compared to competitor products. However, by having consistent product in a facility, you are more likely to have the replacement items or parts that you need when something breaks down.

Increased Expertise

Beside availability of replacement parts, consistent hardware allows you to achieve a level of knowledge and skill about the products that give you an edge with repairs; I developed extreme skill and instincts for when something went wrong. I could detect what was failing by sometimes subtle symptoms that someone with less intimate knowledge wouldn't detect. For the products I knew best, I could often stock parts that allowed me to repair rather than to replace the whole lock. When you deal with mostly Grade 1 hardware, being able to repair by replacing a $10 part rather than replacing a $400 lock can save your institution a lot of money. Plus, stocking smaller parts takes up less shelf space than whole locks.

> **"A commercial locksmith company can't possibly stock every possible brand of hardware that customers might use."**

The greater the variety and diversity of hardware in your buildings, the greater chance that you won't have the proper replacement parts when something breaks (unless you have an unlimited parts budget). Although you might not be the decision maker, incompatible hardware in an institution causes many problems both in cost and the ability to keep things in proper repair in reasonable timetables.



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

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: o

PROFESSIONAL INFORMATION

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

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

Are you licensed to perform Locksmith/Access Control work in your state? o Yes o 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

Probationary Membership

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

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

Probationary Membership – No Sponsorship Required

Persons undergoing training that are new to the industry and do not know any Active member for sponsorship. Probationary period extended from 90 days to one (1) year. Probationary status lifted if sponsor acquired within year. Must obtain license if residing in State requiring licensure. A second background check will be performed by ALOA after 2 years of the 3 year maximum term. Any violation of ALOA Code of Ethics during probationary period will result in immediate termination of membership.

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

Allied Membership

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

❑ US and US Territories	$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

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

Return to:

ALOA, 1408 N. Riverfront Blvd #303, Dallas, TX 75207
Fax (469) 453-5241 • Email: membership@aloa.org

A Faster Retrofit

Tony Wiersielis, CPL, CFDI, tells you how to more easily replace BEST EZs with BEST 9Ks, plus a few more tips.

As I write this, it's the day after Thanksgiving. I'm recovering from my turkey coma and relishing the four-day weekend. *Figure 1* shows the start of a fairly normal day for me. I'm on the road to somewhere, and the sun hasn't even risen yet. If any of you out there do the same, I salute you.

An Easier and Faster Way

Once again at that unnamed college in Manhattan, I wound up doing yet another retrofit. This time, it was removing five BEST EZ keypad cylindrical locks and replacing them with BEST 9K classroom function locks. That's an "R" function in BEST lingo. The irony of this project is that I installed all five of these a few years ago. The silver lining of this cloud is now I have five slightly used spares on my shelf.

For the uninitiated, the EZs are standalone electronic push-button locks. They don't offer an audit trail, so there's no record of who opened the door. You can have a lot of individual PINs but, in practice, most customers pick one number and leave it at that. What's nice about them is all programming can be done from the keypad, including deep resetting to factory default.

Figure 2 shows what I had to cover up. The red circles indicate the holes for the screws that attach the outside keypad to the inside backplate. The blue circle is the hole for the motor and battery wire to pass through. The green arrows point to the holes for the studs on a 9K to pass through; the inside backplate is attached at those two points. The black arrow is pointing to a hole that I am mystified about. I know I didn't drill it, so I can only guess it was there when I first installed them.

Figure 1. This is how a normal day typically starts for the author.

Figure 2. Here, you can see what the author had to cover up during installation.

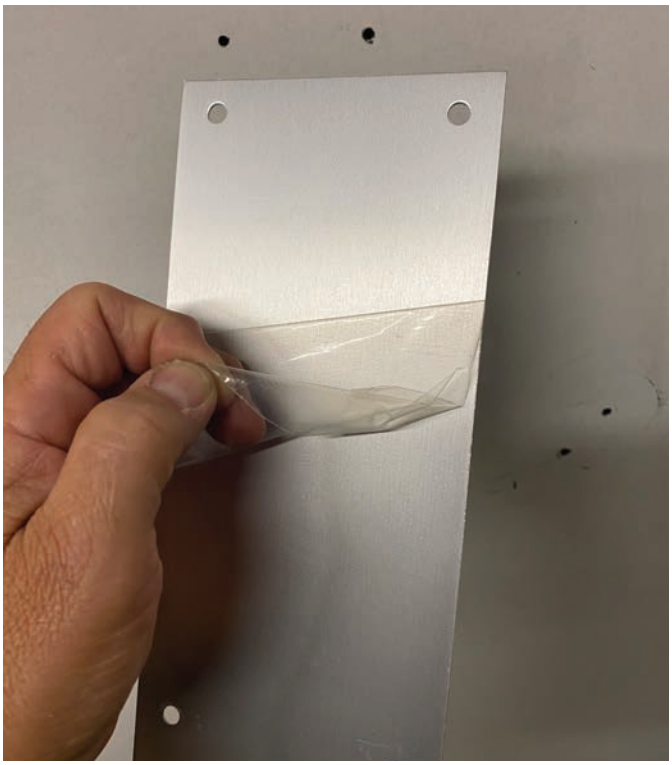


Figure 3. The author is peeling off the plastic from the plates.

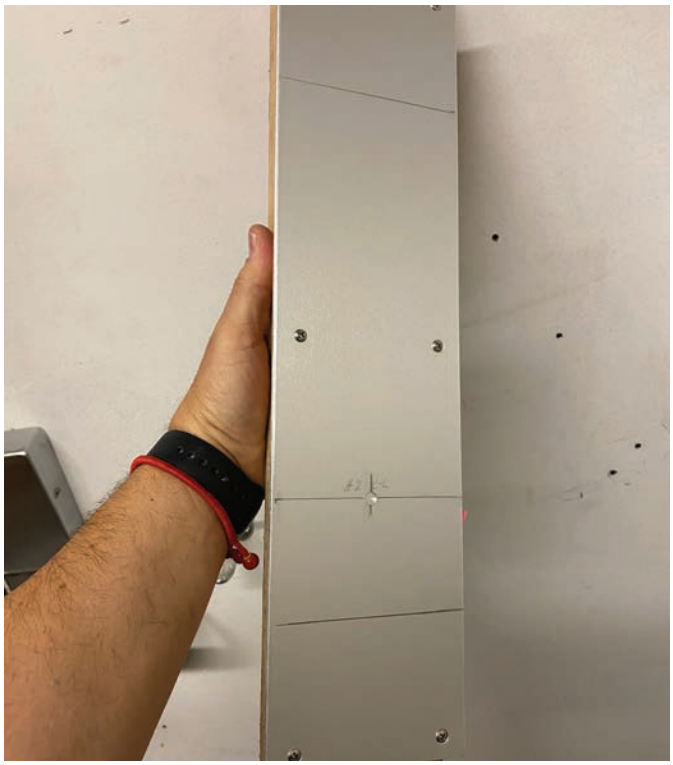


Figure 4. The author lined up the pilot hole for the 2⅛" hole.

Figure 5. A stack of plates is attached to the 2" x 4".

Figure 6. Notice that the holes on the plates don't line up.

I used 4" x 16" aluminum plates to cover all those holes. Since there were 10 plates for the five doors, I decided to prep them in the shop rather than screw around with them at the doors. *Figure 3* shows me peeling off the plastic from the plates. I do this because it tends to melt from the heat caused by the drill bits and hole saws, and I didn't feel like cleaning up the mess.

I decided to stack them and screw them into a piece of 2" x 4" that I clamped in my vise. I did this in two groups. *Figure 4* shows how I lined up the pilot hole for the 2⅛" hole. The horizontal lines at the top and bottom of the plate indicate how I centered it based on the EZ you see to my left on my shop door. I used that to figure out where to drill the holes.

Figure 5 shows a stack of plates attached to the 2" x 4". *Figure 6* shows an issue that can cause a problem. Notice that the holes on the plates don't line up. You want to flip the plates so these holes line up before you screw them into the wood. *Figure 7* shows me drilling the pilot hole for the 2⅛" hole; this lines up with the horizontal centerline of the lock and latch. *Figure 8* shows the template I used for the stud holes above and below the larger hole. *Figure 9* shows me at the door with the 9K passed through the completed plate.

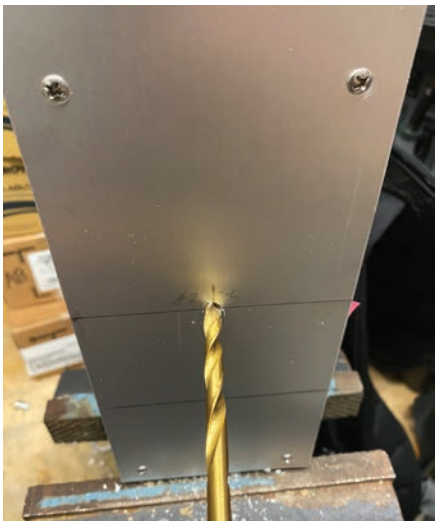


Figure 7. The author is drilling the pilot hole for the 2⅛" hole.

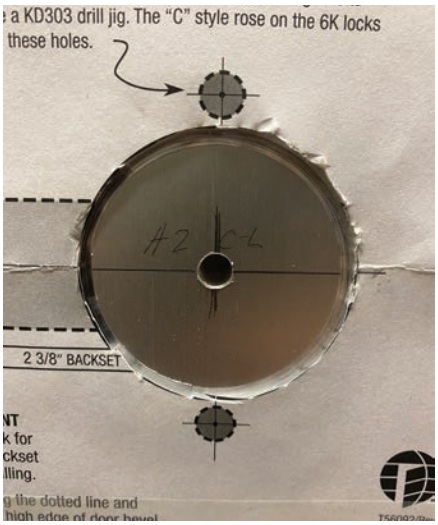


Figure 8. This is the template for the stud holes above and below the larger hole.

Figure 9. The 9K is passed through the completed plate.

In the past, I've done this by screwing on a blank plate and using the pilot bit in a 2⅛" hole saw from the other side of the door, using the existing hole as a guide. Sometimes I'd drill straight through, but I found that the saw deposited a lot of aluminum dust between the plate and the door. Then I'd have to loosen the screws at the bottom of the plate to get it out. I stopped doing that because it wasn't worth the mess.

For the newbies, I used aluminum plates because they're easy to cut and a joy to use. If you need plates that look closer to the brushed chrome finish of 626, that's what you need to order. What you'll get is brass plates plated in brushed chrome. Avoid using a stainless-steel finish plate because what you'll get is a piece of stainless steel.

Drilling and cutting stainless steel is a pain in the butt you really, really want to avoid. You will blunt most drill bits and hole saws drilling the first holes (unless you're drilling at a maddeningly slow speed). Even then, the cutting tools will die way sooner than usual and are expensive to begin with. Obviously, you may have no other option but to use stainless, depending on the environment. Just don't shoot yourself in the foot.

Figure 10. Somebody had tried to remove the plug the rest of the way using a pair of pliers.

Figure 11. The screw that held everything together had loosened and fallen out.

The Cabinet Issue

I recently received a work order for one of the college buildings a few blocks away from the shop, as most of the buildings are. The complaint was the lock had pulled partially out of a Steelcase storage cabinet. Because of COVID-19, nobody was around when I got there, but I was able to locate the offending lock.

Somebody had tried to remove the plug the rest of the way using a pair of pliers, as you can see in *Figure 10*. I was able to use a pick to get it all the way out. I have a box of brand-new Steelcase plugs with keys in the shop, so I had one with me.

What caused the problem was the screw that held everything together had loosened and fallen out. *Figure 11* shows that screw on the left as well as everything else in the logical order that it all goes back together in. However, to get to this point, I had to get the door open first.

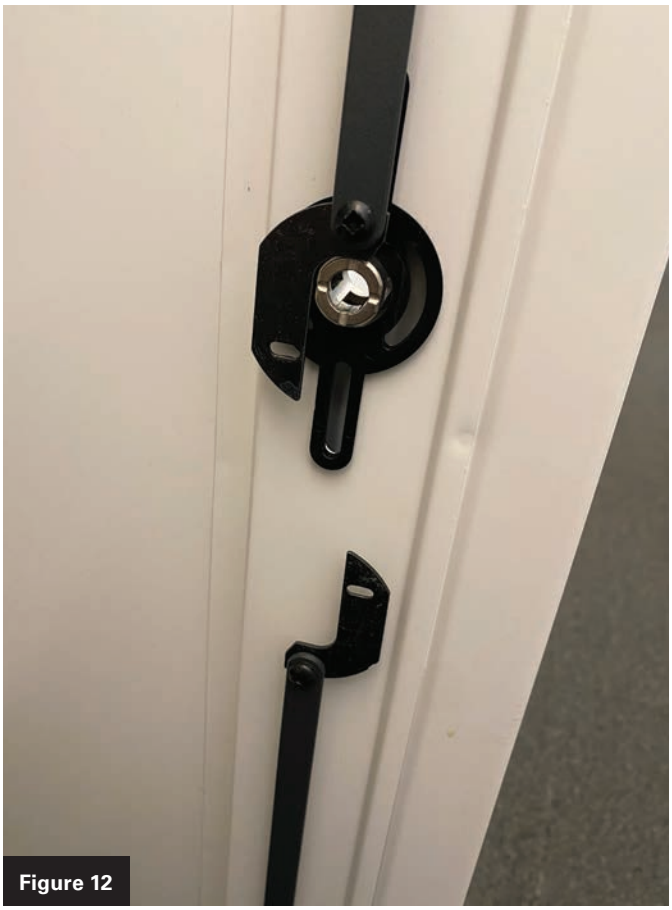


Figure 12

Figure 13

Figures 12 and 13. The bottom locking rod had disconnected and fallen into the locked position.

Figure 14. This photo shows a view of the actual "locked" position I took after everything was put back together.

The bottom locking rod had disconnected and fallen into the locked position (*Figures 12* and *13*). *Figure 14* shows a view of the actual "locked" position I took after everything was put back together. Because of this, I had to resort to jimmying the door to lift the rod out of the way (*Figure 15*). Notice my foot against the bottom of the door as I'm pulling on the top of the door. That was to take off the pressure against the bottom rod so I could pull it up and not get smacked with the door (*Figure 15* was taken after the door was repaired).

The next few pictures are shots of the reassembly process; you can refer to the picture of the parts laid out to see where this is going. *Figure 16* is the small cast part fitted onto the plug. *Figure 17* shows the plug reinstalled and the bottom rod

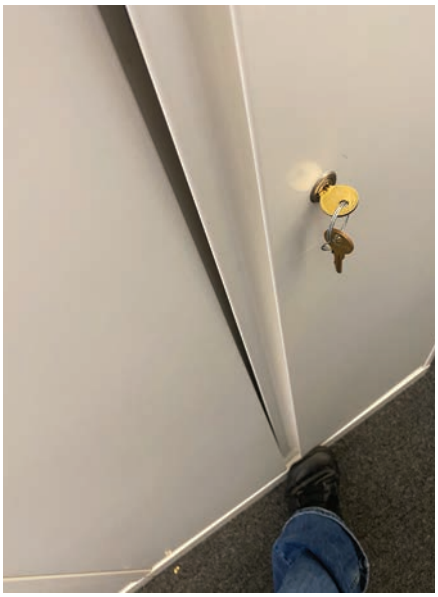


Figure 15. The author had to jimmy the door to lift the rod out of the wa.y

Figure 16. Here, you can see the small cast part fitted onto the plug.

Figure 17. The arrows point to the tip of the screw and the slot it slides up and down in when the plug is turned.

Figure 18. The top and bottom rods are in place along with the plastic bushing.

Figure 19

Figure 20

Figures 19 and 20. The top rod is in the locked and unlocked position.

about to be attached. The arrows point to the tip of the screw and the slot it slides up and down in when the plug is turned. *Figure 18* shows top and bottom rods in place along with the plastic bushing.

The next and last step was the replacement of the round black disc seen in *Figure 11*. This screwed into the back of the plug and turned out to be a pain to do. That was because the top and bottom rods — with those two screws in the slots — fall out of place at the slightest touch. I finally got everything back together and working. In *Figures 19* and *20* you can see the top rod in the locked and unlocked position. In *Figure 21*, you can see the keys sticking out of numerous other cabinets. That made me wonder if someone passing by had hit the key, bent it and pulled the plug partially out.

Tips and Nifty Stuff

I pass through the carpenter shop constantly at that other college in Pennsylvania. One day, I found the wedge you see in *Figure 22* sticking out of a scrap

Figure 21. You can see the keys sticking out of numerous other cabinets.

Figure 22. The author found this wedge sticking out of a scrap box and stuck it under the shop door as a joke.

Figure 23. The pavement is a lot lower than the bottom of the door. The author decided to keep the extra-large wedge in case he runs into this situation again.

Figure 24. This is the part in a Detex ECL-230 exit alarm that holds the rim cylinder used to lock and unlock the device from the inside.

box. I stuck it under the shop door as a joke and an exercise in overkill. Then I thought about all the times a standard size wedge wouldn't cut it.

In *Figure 23*, it's under an outside door where the pavement is a lot lower than the bottom of the door. Suddenly, this thing became a really handy item to have around. I stuck it in the back of my truck in case I run into this situation again, as I have constantly in the past. I think I might paint it Day-Glo orange so it's more visible.

Figure 24 is the part in a Detox ECL-230 exit alarm that holds the rim cylinder used to lock and unlock the device from the inside. I had just removed the old standard cylinder and noticed that there was only one star washer, and I needed two.

While you can install the screw without it, you run the risk of over tightening it. The head of this screw is only slightly larger than the hole it fits through. It's possible that the head will pass through the hole and ruin your day, as it did mine. The star washer prevents this, as it's much larger than the hole.

I used a standard flat washer that I clamped in my locking pliers and ground down to fit the way you see it. There's no chance of it ever pulling through, but I made sure to use Loctite in the absence of a star washer since these suckers tend to come loose.

Tony Wiersielis, CPL, CFDI, has more than 37 years of experience and has worked in most phases of the trade throughout the New York metropolitan area. He was named *Keynotes* Author of the Year for 2016 and serves as ALOA's Northeast Director. Reach him at aew59@juno.com.

A House Divided

By Jim Hancock, CML, CMST

ORDINARILY, THE PHRASE "a house divided" portends a dysfunctional situation, where each segment deteriorates the strength of the whole — so much so that, ominously, a complete breakdown and failure is predicted.

While this may be true for many things (from business ventures to family units,) ALOA Security Professionals Association Inc. is a stronger entity because of our *divisions*. As we kick off 2022, here is a quick overview of plans for each division this year. Of course, this comes with a disclaimer that, to quote Mick Jagger "you can't always get what you want," and in light of 2020 and 2021, "always" and "never" can no longer be used.

ALOA: The Mothership

ALOA 2022 will be held in Las Vegas at the South Point Hotel & Casino. We've started scheduling classes for this convention and are looking at a full slate of classes, including traditional locksmithing, automotive, investigative, institutional and business topics. We're hoping for some new topics to go along with the updated traditional offerings.

We're also looking at a couple changes to the PRP testing at the convention that would 1) allow test takers to take the test from the comfort of their hotel room and 2) in some instances, require a hands-on component as part of the grade.

We are also hopeful to bring back training to Dallas in 2022 as well as to locations around the country, with help from our sponsors.

SAVTA

SAFETECH 2022 is quickly approaching in Lexington, KY, which is the safe and vault capital of the world (and, at very least, the bourbon county seat). There will be five full days of classes covering mechanical safe locks, electronic safe locks, key-operated safe

Also, this year's Friends of SAVTA Live Auction not only offers the normal fare of unique, quirky and useful items, but thanks to TimeMaster and Mike Potter, there will also be a pair of tickets to Elton John's farewell tour concert in Lexington! It will also include a hotel night at the hotel attached to the concert venue. This is an awesome item that I know I will be bidding on myself.

IAIL

A new "chief" in charge of the International Association of Investigative Locksmiths promises to bring new classes, new instructors and a new dedication to the "CSI of the locksmith world." There will be investigative classes offered at the ALOA 2022 convention, and there has been discussion about holding an IAIL conference in the fall of 2022 somewhere in the northeast U.S. or upper Midwest. This will be a two- or three-day event with multiple daily classes and CFL certification testing. Regarding testing, there's a concerted effort to upgrade the written exams.

AIL

Thanks to ALOA Institutional Locksmiths board (specifically, Vernon Kelley), there is now a full slate of exams available for PRP certifications aimed at institutional professionals. Now, instead of having to pass exams that deal with questions that include automotive, safe or other content that isn't specific to institutions, there are tests that deal with specific hardware found in nearly all facilities.

"We are also hopeful to bring back training to Dallas in 2022 as well as to locations around the country, with help from our sponsors."

We've also been having discussions with several manufacturers and manufacturer reps regarding training from them on their products and product lines that we can host around the country at their facilities.

IAAL

The International Association of Automotive Locksmithing (IAAL) is the newest ALOA division and has the potential to be the most dynamic division in a short time. Simply by virtue of the number of technicians involved in the automotive side of our industry, the membership could grow rather rapidly. This division is way overdue, and thanks to the currently seated board, it is finally official. With a lineup of instructors that include Ed Woods, Mannie Natal, Tony Cagle, Donnie Sherfield, Rafael Marta, Jeff Baker, Travis Wright and more, the class offerings at ALOA 2022 should be exceptional. There is potential for an IAAL standalone conference in the fall of 2022 or the spring of 2023. This is an exciting development indeed.

None of us can predict 2022 (heck, we can't even predict the third week in January). Assuming the skies don't open and sinkholes that we can all fall into don't form — or, hey, a virus not cause a global pandemic that shuts down the entire world — the upcoming year looks like a grand return to education and certification by the "divided" but very much *whole* ALOA.

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

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