The official publication of ALOA SPAI, an international association of security professionals October 2020

KEYNOTES

SECURING YOUR SUCCESS

Institutional Locksmiths:

TODAY'S SUPERHEROES

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High-Security Systems

10 popular systems designed for institutions

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The ABCs of School Security

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KEYNOTES

OCTOBER 2020 | VOLUME 66, ISSUE 10

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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Goodbye to Some Great Ones

How is it possible that I could already be writing the presidential viewpoint for the October *Keynotes*? Not that it has been a good year by any stretch of the imagination — and I can't say that I will be sad to see it go away — but I just can't believe that there are only a couple of months of 2020 left. I am getting cold just thinking about it!

I have not encountered anyone who has escaped the impact of COVID-19. That would include the institutional locksmiths all over the world who we are recognizing in this issue of *Keynotes*. There are facilities that are eliminating positions and letting people go. The type of facility and what they do seems to dictate the extent of the cutbacks. Please keep these brother and sister locksmiths as well as their families in your prayers. It will continue to be difficult until we can put this thing behind us.

Progress at ALOA

On a brighter topic, ALOA has continued to add topics and classes to its webinar offerings! While everyone is adhering to social distancing practices such as eliminating travel and avoiding large gatherings, these high-quality webinars are a great way to get some education and earn some CEUs! Even after the crisis is over, ALOA plans to keep a robust schedule of webinars.

We are also planning for the upcoming year, including our annual events!

"I don't know about everyone else, but I am really looking forward to getting away, meeting up with old friends and attending some industry-related events. "

Currently, we have every intention of holding SAFETECH in Reno, NV, the ALOA Convention and Security Expo in Orlando, FL, and the Security Leaders Business Conference in Memphis, TN. I don't know about everyone else, but I am really looking forward to getting away, meeting up with old friends and attending some industry-related events. We have been cooped up for far too long!

In closing, it is with a heavy heart that I must report on several recent deaths from leaders in the security industry. I am sure that most folks who read this will know the name Mark Miller from Lockmasters. Members of the Miller family have been leaders in this industry for much longer than I can remember. What many may not know is that Mark has been suffering with esophageal cancer and very recently lost his courageous fight to it. Rest in peace, Mark. You have certainly earned it.

Also, we recently lost John Arnold who died as a result of a motorcycle accident. John served on the ALOA board as South Central director. He also was the treasurer for the Texas Locksmith Association, and I considered him a dear personal friend. Please keep his wife, Dianne, and his two sons in your prayers.

We also lost Bill "the Colonel" Gibson (who was a past executive director of ALOA) as well as another close personal friend, Danny Knight. Danny was a locksmith (Stewart Brothers Hardware) in Memphis, TN, who served on several association boards and worked tirelessly on locksmith legislation in Tennessee.

All these great men and leaders will be sorely missed!

Respectfully,

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

Renew Your Membership for 2021

I HOPE EVERYONE IS ENJOYING the beginning of fall weather. It's finally cooling off here in Texas, and I hope it's just as lovely where you are. It's now member renewal time, and I wanted to remind you of a key benefit that we debuted last year.

In 2019, we introduced a health insurance program as a member benefit. Open enrollment season is now upon us for 2021, so I'd like to make sure you knew about this option for yourself and your employees.

ALOA has partnered with Lighthouse Insurance Group, LLC (LIG) to offer our members the option to enroll in health insurance and related coverage options, including major medical, short-term health plans, vision and dental plans, critical care coverage, life insurance and several supplemental health options. What's even better is that not only can you receive coverage, your family can too, and your business can craft a turnkey program for employees.

We have heard from members for years that access to affordable health insurance for themselves and their employees has been a challenge. We are thrilled to have found the right fit for the association and our members, and we hope you have been taking advantage of it.

We are happy to answer any questions you have (as is LIG). Please contact us at membership@aloa.org with your questions. You can also call LIG directly at (888) 582-9813.

Membership Renewals

You will soon be receiving your membership renewal notice from ALOA. This is a great time to remind yourself about all the benefits ALOA offers you. You, of course, receive the magazine you're reading, but you also get professional bonding, a free listing on FindALocksmith.com, local customer referrals, access to industry-leading education (online and in person) and discounts on everything from books to convention registrations. And don't forget about the health insurance program mentioned above!

But, more than that, as an ALOA SPAI member, you are a part of a worldwide network of esteemed security professionals. As an association member, you not only get professional networking, but you also get the camaraderie that comes with being a part of this group. If you want to remind yourself of all of the other wonderful benefits you receive with your membership, please visit ALOAMembers.org. There, you can also log in to renew your membership.

We know that this has been a challenging year for many — including ALOA. We have worked hard to keep your benefits in place, and thank you for your understanding for any challenges during the process.

You will be happy to know that we plan to go back to print magazines in 2021, and we are moving forward with convention planning as well. In the meantime, please take advantage of the many webinars ALOA is offering so you can continue to receive CEUs.

Thank you for being members. Let us know if you have any questions about your renewal or requests for future potential benefits. We are here and listening.

Mary A. May

Mary A. May
Executive Director
mary@aloa.org

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The Industry Loses Two Leaders

Industry leaders Mark Miller, left, and John Arnold, right, recently passed away.

Two security industry leaders have recently passed away. Mark Miller, president of Lockmasters, passed away in late September. A longtime leader in the industry, he established the Friends of SAVTA Live Auction, was the 2005 recipient of GPLA's prestigious Philadelphia Award and was a 2011 inductee into SAVTA's Skip Eckert Hall of Fame. His presence in the industry will be greatly missed.

Former ALOA South Central Region Director John Arnold, CML, has passed away after a motorcycle accident in September.

John had recently been serving as treasurer for the Texas Locksmiths Association. He had been a member of ALOA since 2009 and had also been a member of AIL and SAVTA. Please keep his family in your thoughts.

Framon Releases New Products

Framon has released several new products, including the Safe Deposit Killer Kit. The kit helps quickly drill S&G and Diebold safe deposit box locks when traditional methods can't be used due to a plastic or flimsy door. Simply insert the appropriate guide into the keyway and use a hole saw to drill out the face of the plug. The made-in-the-USA kit comes with three guides and two hole saws in a plastic carrying case.

The company has also unveiled the SFIC Pinning/Capping Block for locksmiths who use interchangeable cores. It comes with a pinning/capping block, ejecting pin and capping tool. Insert the core into the tool, eject the old pins and flip the block over to load the chambers and cap the core.

Framon's Genericode has also been updated for 2020. The new version includes a new data screen layout showing key blanks references and outlines, updated vehicles, new code series and additional compatibility with the line of Laser Key Products machines.

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Attention Texas Locksmiths!

The new "Designated Company Representative" rule has gone into effect. Those who previously registered as qualified managers or supervisors and are serving as company representatives may no longer function as company representatives unless they hold at least 25% interest in the business or are appointed an officer to oversee the security-related aspects of the business. Contact membership@aloa.org for more information.

Master Lock Announces New President

The Master Lock Co. has announced that David Youn is the company's new president. Brett Finley previously held the role of acting president before hiring Youn into the permanent role, and Mike Bauer was president before that. Youn previously worked with Samsung Electronics as the vice president of global marketing and retail for the home appliance business. He holds a degree in political science from Stanford University and a Master of Business Administration from Northwestern University.

IN MEMORIAM

Former ALOA Executive Director **Charles W. Gibson Jr.** has passed away. He served in that role from 1992-2008.

NEW APPLICANTS

As of August 28, 2020

CALIFORNIA

Anaheim
- **Idan Madhala**
  California Locksmith Security Solutions

Concord
- **Nicholas L. Colomb**
  Warner Complete Carcare

COLORADO

Colorado Springs
- **Thomas J. Rice**
  American Lock & Key

FLORIDA

Miami
- **Darryl Alexis**
  Adelza Group Holding

Pensacola
- **Hogan N. Franklin**
  Sponsor: Chris Roney, RL

Tampa
- **Jon-Michael L. Herlth**
  Action Lock in Safe
  Sponsor: Robert W. Robinson, RL

GEORGIA

Acworth
- **Juan Martinez**
  JN21 Locksmith Inc.

MICHIGAN

Bedford
- **Elizabeth J. Meredith**
  Institutional Locksmith

Detroit
- **Chuma J. Olisakwe**
  Locks & Security LTD
  Sponsor: Salvatore J. Dulcamaro, CML

MISSOURI

St. Louis
- **Joe R. Sedlock**
  Beishir Lock and Security
  Sponsor: Ted J. Beishir Jr., RL

NEW MEXICO

Carlsbad
- **Kyle Loving**
  Sponsor: Perry C. Gipson, RL

OHIO

Blacklick
- **Winter Adams**
  eCrypt Locksmith LLC
- **Skylar Finn**
  eCrypt Locksmith LLC

OREGON

Portland
- **Madison Doshier**

PENNSYLVANIA

Philadelphia
- **Mikheil Svianadze**

South Williamsport
- **Matthew R. Raap**

TEXAS

Austin
- **David B. Manning J.**
  Dbmannjr Lock Services LLC
  Sponsor: Guy T. Robinson

Lufkin
- **Angela F. Lee**
  Billy Lee's Locksmith Service, Inc.
  Sponsor: Billy S. Lee, RL

The Woodlands
- **Richard P. MacPhee**

UTAH

Ogden
- **Joshua H. Summers**
  Weber State University
  Sponsor: Janae L. LaRue

VIRGINIA

Fairfax
- **Levina Fang**
  Sponsor: Christopher S. Looney, ARL, CRL

KUWAIT

- **Abdulaziz Alahmad**
  Almizlaj for carpentry construction and blacksmith

We Need Your Help

Attention, ALOA Members: Help us eliminate the industry scammer problem by screening these applicants, who are scheduled for clearance as ALOA members, to ensure they meet the standards of ALOA's Code of Ethics. Protests, if any, must be made within 30 days of this *Keynotes* issue date, addressed to the ALOA membership department, signed and submitted via e-mail to membership@aloa.org or via fax to 214-819-9736. For questions, contact Kevin Wesley, membership manager, at Kevin@aloa.org or (214) 819-9733, ext. 219.

CALENDAR

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

NOVEMBER

November 4-6
IML Security Expo
Orleans Hotel and Casino, Las Vegas, NV

DECEMBER

December 7-12
Six-Day Locksmithing Fundamentals
ALOA Training Center, Dallas, TX
education@aloa.org or
(800) 532-2562, ext. 101

2021 APRIL

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

JULY

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

CFL-Architectural Credential Gets a New Name and Logo

Now that September is behind us, it's time to start making plans for the season of more COVID-19 crapola or at least until after the election! With no travel to get-togethers, we are hard pressed to see our colleagues. Hopefully, 2021 will be the beginning of a new era of social gatherings. Like most of you, our business is down, with only a few cases hanging in there.

As I mentioned last month, I went out on my first site inspection this year. When I arrived, there were six attorneys representing everything for the contractor who installed the door, the building management company, the door and lock company and, of course, the plaintiff. Each of these attorneys had no less than four expert witnesses. We had to wait and examine the door in shifts and were not allowed to remove the lock!

What happened is that the tenant went onto the balcony to have a cigarette in the late evening after returning from a holiday party. When she closed the door to keep the cold air from entering, it automatically locked her on the fifth-story balcony. It was cold, being early winter, and she panicked. After yelling for help, she tried to climb down the outside of the balcony. She fell to the ground and suffered multiple injuries that took almost a year to start healing.

The lock was designed to stay unlocked until the door is closed, and the thumb lever is manually thrown to activate the locking of the door. It appears that — with the way this is designed — if you reach around behind the handle and engage the lever just enough that it unlocks the door and you leave it in this position, the door may activate the mechanism to lock the door upon closing. This is a touchy situation because the lever is not designed to be in the half-open position.

Once the lock is removed from the door, we'll be able to examine the internal components to see if any alterations have been made to the parts or if there is excessive wear. Right now, the cause of this incident cannot be determined. Stay tuned for more details.

CFL Update

Achieving your CFL credential is a commitment to excellence in all you do as a forensic investigator. Whether you do a couple of cases a year or 25, you're expected to treat each one with the same level of detail, no matter the substance of investigation. Ongoing education is a must for the forensic investigator. Staying on top of the industry's changing materials and the regulations governing them is vital to your worth as an expert witness.

Our CFL-Architectural is now Certified Forensic Fire Door Inspector (CFFDI), and we will be releasing a new logo to go along with it. Let me know if you have any questions.

If you have any comments or suggestions, please contact me at iailpresident@aloa.org.

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

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

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Big Enough for Great Service, but Small Enough to Care

Today's Superheroes

Institutional locksmiths protect the world.

By Steve B. Fryman, CRL, CAI, CISM

Who wants to be a superhero? I love all the Marvel and DC characters. As a kid, I collected comic books and would imagine myself with superpowers. Our role as physical security professionals is to preserve life and property with physical security.

Institutional locksmiths have physical weapons to provide protection against loss of life and assets. ALOA Institutional Locksmiths is a legion of heroes that have special powers to use hardware and software to safeguard schools, airports, office buildings and more from forces of evil. As security professionals, we provide and manage the first line of defense in an ever-changing and hostile world of uncertainty.

Institutional locksmiths install and maintain access control, CCTV and master key systems. They also provide key control that protects lives and billions of dollars in assets worldwide. Regardless of what part of ALOA you belong to, you are making this world a better place every day. What an incredibly rewarding profession we have that affects so many people in so many places.

"As security professionals, we provide and manage the first line of defense in an ever-changing and hostile world of uncertainty."

How Do We Improve Our Superpowers?

Education is important because knowledge is power and a very important way to grow our superpowers. We live in a dangerous and ever-changing world. Take the time to seek out educational opportunities in as many areas as you can.

I am looking forward to seeing all of you in Orlando next year at ALOA 2021. In my role as an ACE instructor

of Institutional locksmith classes, I look forward to being in the classroom at the ALOA conventions. It does not matter where the convention is held; it is always a great opportunity to grow and share our knowledge.

I really missed seeing everyone this year due to the virus. One of my favorite things in life is meeting and talking to folks who do the same work as I do. The opportunity to learn from one another is amazing. In addition to the face-to-face classes offered at ALOA conventions, a wide variety of classes are offered online now. Please do not miss out on these opportunities to hone your skills as we face the evils of this world. As we pursue knowledge by reading articles in *Keynotes*, attending in-person classes or taking classes online, we acknowledge ALOA to be a great resource when it comes to improving our skills.

Perhaps you are pursuing a career as a fire door inspector or you're interested in taking life safety classes on NFPA 80 or 101; there are many opportunities to improve your life-saving abilities. Improving your knowledge about hardware and its special applications is always a great idea. Discover how antimicrobial finishes will improve the health of end users. Learn how you can add touchless solutions to exits and entrances. In a world of deadly viruses, this could save lives and fight against the unseen enemy.

Key control is always a great topic of discussion, as it protects and adds longevity to master key systems that have a life of their own. If enforced, best practices can maintain and sustain systems, thereby adding life to a system.

"It does not matter where the convention is held; it is always a great opportunity to grow and share our knowledge."

What Other Superpowers Should We Have?

Great soft skills help round out our trade skills, creating a better and more multidimensional superhero. Communicating accurately and respectfully is paramount to assessing the needs of people we serve. This is super helpful when having a key consultation or getting a directive from an end user regarding security concerns in their work areas. It's so important to be a good listener and use intentional listening to show the extent that you care.

Please remember that great listening skills covey you genuinely care about others' needs. I know that most of us in the physical security world do genuinely care about people and their well-being. It would such a shame not to care about the people we serve.

When what we do professionally becomes burdensome to us, we won't be as effective in our roles as front-line protectors. Hopefully, you have a passion for people and helping folks feel secure in their environments. I find the helping and serving people aspect of what we do to be very rewarding.

During this pandemic, I have been an essential on-site employee every day. It's been very helpful to others for me to provide access to locked-down buildings and to just generally try to be extra helpful and understanding as we watch the world change shape. Thanks for being that superhero to those we serve and protect!

Steve B. Fryman, CRL, CAI, CISM, has worked in the physical security field for more than 40 years. Now working as the key shop 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.

SECURING SCHOOLS: The ABCs of School Security

Consider code compliance, emergency access, egress and more when choosing a solution.

By Lori Greene, DAHC/CDC, CCPR, FDAI, FDHI

As K–12 and university administrators across the nation strategize on how to safely bring students back to campus this fall, classroom security may inadvertently take a backseat to social distancing measures, healthy environments and remote learning. COVID-19 continues to be a major consideration for schools and students alike, and the de-prioritization of classroom security can lead to even tighter budget constraints and rushed decisions that do not comply with current building codes, fire codes and accessibility standards.

In addition, many of the administration employees tasked with improving school security are not experts in locks, electrified hardware or life-safety codes, and the varied recommendations can be confusing.

School staff and members of PTOs may hear about "solutions" that are not financially feasible or code-compliant and may only serve to give the administrators, teachers, students and parents a false sense of security. Because of this, it is critical to carefully consider all aspects of security products when evaluating potential solutions.

As with every security solution, each school or campus has a unique set of needs, and there is no one-size-fits-all solution. In this article, I will discuss classroom security, barricade devices and code compliance.

Classroom Security

Active assailant situations are only one type of hazard that administrators must plan for, and these events are statistically less likely to occur than other types of emergencies such as severe-weather events, fires, bomb threats, incidents with drugs or alcohol, mental health issues, bullying and other non-fatal victimizations.

Consider the following important aspects of a classroom's security:

- **Egress.** Evacuation is an important part of every facility's emergency plan, as is the need to keep all options open during an unpredictable active shooter or other hostile event. The use of non-code-compliant security devices can delay or prevent building occupants from exiting. In addition, lockdown time may be increased while staff locate and install the devices.

- **Emergency response.** Once put in place, some retrofit security devices cannot be removed from the outside, preventing staff and first responders from entering. This potentially violates building and fire codes. During several school shootings, assailants barricaded doors and delayed law enforcement response, which may have increased the number of casualties. After the shootings at Virginia Tech, Platte Canyon High School and the West Nickel Mines Amish Schoolhouse, emergency responders publicly discussed their difficulties in accessing the barricaded areas.

- **Unauthorized use.** Retrofit devices can be used by anyone who has access to them, including someone who wants to barricade himself, along with others, in a room to commit harm or take hostages. Planning to use classroom barricade devices during an active shooter event without considering the potential for misuse of the devices poses a risk to students and school staff. Codecompliant locksets that meet the requirements for egress, accessibility and fire protection are readily available and provide the necessary level of security.

"As with every security solution, each school or campus has a unique set of needs, and there is no one-size-fits-all solution."

- **Additional considerations.** Ensure that teachers and staff — including substitute teachers — have access to the keys or access-control credentials needed to lock and unlock classroom doors. Enable a means of communication between staff and a central station or the main office. Deliver immediate notification of a hostile event to provide staff crucial time to secure classrooms, cover door vision panels and sidelights and move students out of the line of sight.

Barricade Devices

While retrofit barricade devices or inexpensive metal bars welded in the metal shop may be tempting due to their simplicity, barricade devices — such as those designed to be attached to the door arm closer at the top of the door, secondary locking devices and devices that latch into the floor — can do more harm than good and may pose serious risks to students, teachers and first responders. The model codes used across the U.S. were created by a consensus process involving hundreds of stakeholders and based on more than 100 years of experience — often from tragic events and hard-earned lessons.

I've been surprised by the bills I've seen in several state legislatures that remove all of those safeguards. I've been even more bewildered when a fire marshal considers overriding the adopted model codes, just so a school district can purchase classroom barricade devices or have the shop class start bending bar stock.

When parents and community members pressure districts to "do something (anything!), and do it now," it's tempting to purchase retrofit barricade devices for $150 or less per classroom. The problem is that some of these security methods may trap students and teachers inside the classroom, and in most cases, they are unnecessary. The majority of classroom doors are equipped with locksets or panic hardware certified to ensure security and durability.

If school staff members do not have keys to the existing locks, this can be resolved for a minimal cost, even if the locks need to be rekeyed. If the existing lock function is not ideal for today's security threats, some locks can be upgraded with a conversion kit to change the function rather than replacing the entire lock. This can often be done for a lower cost than purchasing a classroom barricade device. If glass in vision lights and sidelights adjacent to existing hardware cause concern, there are films or replacement glazing products available that increase impact resistance.

If a new lockset is needed, it's often because the school is long overdue for an accessibility upgrade, because the existing locks are beyond their usable lifespan or because of a desire to add electronic access control and remote lockdown functionality. But a complete lock replacement is not required for most schools and should not be used as the typical comparison when evaluating security hardware options.

Code Compliance

Most states require code-compliant security devices through adoption of

one or more of these recognized model codes: NFPA 101 – The Life Safety Code, the International Building Code or the International Fire Code. States also adopt accessibility standards to ensure compliance with the Americans With Disabilities Act, a federal law that protects the rights of people with disabilities. These codes and standards require classroom door hardware to meet the following requirements:

- With few exceptions*, classroom doors must unlatch with one releasing operation (all locks and latches simultaneously), and releasing hardware must be mounted between 34 and 48 inches above the floor.
- Hardware must be operable without tight grasping, pinching or twisting of the wrist, and without the use of a key, tool, special knowledge or effort for egress.
- Locked doors must be able to be unlocked from the outside with a key, credential or other approved means to ensure that staff and emergency responders can enter the room.

Ultimately, we all want our children, teachers and staff to be safe and secure as they head back into the classroom.

Ask yourself these six questions when evaluating a security solution to determine whether or not it's safe and code-compliant:

1. **Does the door unlatch with one releasing operation?** With a few exceptions*, current model codes require one operation to release all latches on the door simultaneously.
2. **Can the door be opened for egress without a key, tool, special knowledge or effort, and without tight grasping, pinching or twisting of the wrist?** When it's time to exit, a building occupant must be able to open the door without wasting valuable time trying to find a key or remove a security device that is not intuitive.
3. **Is the releasing hardware mounted between 34 and 48 inches above the floor, or in the location required by the state or local codes?** This requirement ensures that all building occupants — including children as well as people using wheelchairs — can operate the hardware for egress.
4. **If the door is a fire door, is the locking/latching hardware compliant with NFPA 80 and listed to UL 10C/ NFPA 252?** This ensures that the product is suitable for use on a fire door assembly and that it will not negatively impact the performance of opening protective.
5. **Can the retrofit security device be deployed without attaching to or modifying the existing panic hardware, fire door hardware or door closers?** Retrofit devices attached to existing hardware may impact the listing and/ or performance of the hardware and often rely on the strength of fasteners and connections that have not been tested for this purpose.
6. **Is it possible to unlock the door from the outside with a key, credential or other approved means?** It is critical for school staff and emergency responders to have access to classrooms from the outside in case an unauthorized person secures the door in an attempt to commit an assault or other crime.

** For more information on the exceptions related to the two-releasing operations for egress, visit idighardware.com.*

Lori Greene, DAHC/CDC, CCPR, FDAI, FDHI, is the manager of codes and resources for Allegion. She has worked in the industry for more than 30 years, including more than 20 years as a hardware consultant writing specifications. Greene is a member of CSI, the Door and Hardware Institute (DHI), the International Code Council (ICC), the National Fire Protection Association (NFPA) and the Builders Hardware Manufacturers Association (BHMA) Codes and Government Affairs Committee. She blogs at www.iDigHardware.com, which celebrates its 11th anniversary this year. Contact her at lori.greene@allegion.com.

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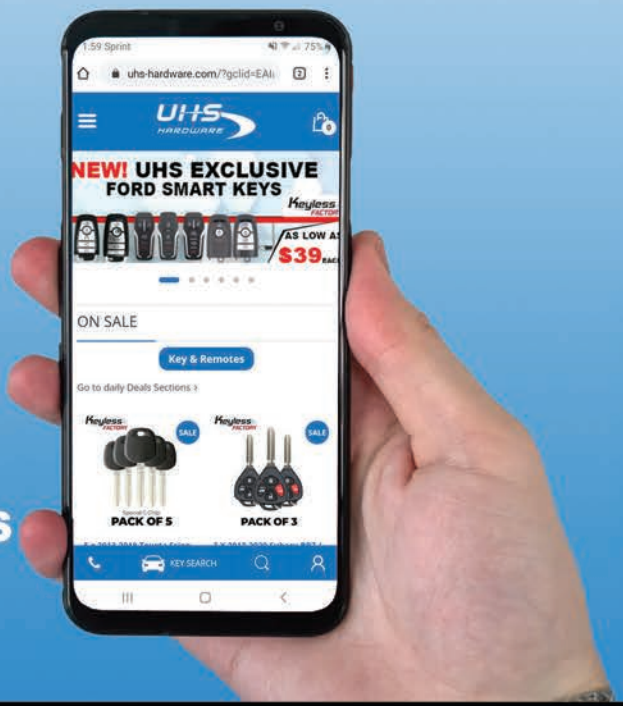

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HIGH SECURITY SYSTEMS

In this multi-part series, **William M. Lynk, CML, CPS, ICML, CMIL, M.Ed.,** discusses 10 popular systems designed for institutions.

To both precede and conclude this multi-part article, a special set of thank yous you is warmly extended to the people who have helped in contributing to make this major article possible. They include: **Marty Day**, ABLOY; **Ray Marquis**, ABLOY; **Tom Demont**, ASSA; **Lance Berger**, ASSA; **Monte Salway**, SCHLAGE; **Rami Almosnino**, MUL-T-LOCK; **Rob Shanley**, SARGENT; **Lori Brown**, YALE/CORBIN-RUSSWIN; **John Ulaszek**, ULTRA SECURITY/BEST; **Clyde Roberson**, MEDECO; **Peter Field**, MEDECO; **Mike Phillips**, KABA-ILCO; **Lynn Best**, KABA-ILCO; **Tom DiVito**, BILOCK; **Chris Martell**, BILOCK; **Billy Edwards**, YALE/MEDECO/MASTER; **Jerome Andrews**, KABA/CORBIN-RUSSWIN/DORMA; and **John Hubel**, KEEJOHN KEYS. Very appreciated!

High Security: Right On or Overkill?

When a customer — whether residential, commercial or institutional — requests high security, you need to carefully look at the situation. Most customers (and many locksmiths) are unaware of what high security really means, especially in relation to key control.

The Merriam-Webster dictionary defines the term as follows:

high security *- (adj.) carefully locked, protected or guarded*

Within the locksmith security field, this definition seems a bit broad and offers nothing concrete or specific. *The Professional Locksmith Dictionary* does not include a definition of high security, but it does define "high security cylinder":

high security cylinder *- (n.) a cylinder which offers a greater degree of resistance to any two or more of the following: picking, impressioning, key duplication, drilling or other forms of forcible entry*

This type of cylinder offers a much higher standard of "high security" compared to many common residential locks on the market such as a conventional Kwikset or Weiser lock. Keep in mind that the cost for a high security lock will also rise exponentially. But, when we get to a UL 437 cylinder for consideration, an extremely high standard of high security can be offered, though the cost will also increase dramatically.

Now we are zeroing in on the particulars of what high security may mean to our customers, or those of us who are institutional locksmiths. Before we examine the UL 437 aspect of high security, let's clear up a major point of misunderstanding between high security and key control.

Key Control vs. High Security

All too often, customers and some security professionals confuse key control with high security. This is prevalent in residential, commercial, industrial, governmental, institutional and other related markets. In an institutional setting such as a school, when principals ask for

a high security lock, they may actually be in need of basic key control, limiting access to that lock. They may explain to you that a teacher lost the key to the language arts classroom, and they believe a student now has the key.

In reality, the principal may not actually require a high security lock or a UL 437 cylinder. In the situation just presented, a high security cylinder is certainly not needed. Whether dealing with a personal residence, hospital or commercial property, using professional discretion is important in determining the correct use of key control options or high security applications.

What Is Key Control?

The safety and security of any property should be at the top of every locksmith's list of concerns. If any keying system is compromised — whether it's a one-deadbolt home or a thousand-lock hospital — both safety and security are lessened.

Key control is one of the most essential components in assuring longevity of a system, providing security of property and ensuring the safety of all individuals. The Professional Locksmith Dictionary defines key control as:

key control *- (n.) 1. any method or procedure which limits unauthorized acquisition of a key and/or controls distribution of authorized keys 2. a systematic organization of keys and key records*

Key control encompasses basically two elements: 1) preventing keys from ending up in the hands of unauthorized individuals and 2) systematically structuring and recording key distribution while addressing issues pertaining to lost, stolen, broken or damaged keys.

The second aspect is not applicable to the residential market, but it's too often forgotten in institutional and commercial areas where a thorough written plan should be enacted and followed.

Another viable option to add security is to use a patented keying system, which might be preferable to installing high security cylinders. This solution may also prevent impressioning, manipulation, drilling, etc.

In many situations, the lack of a well-thought-out and properly maintained key-control policy may be what allows a security breach within a facility. For a residential property, restricted key duplication is usually not a high priority.

However, indicators of a shortened key system life span include keys that business employees duplicate at the local hardware store by placing tape over the "duplication prohibited" or similar stamp; higher-level masters shared among colleagues who do not have high-level authority; lost keys that are replaced by a colleague copying a key for a friend; lost keys that go unreported (and are found by others who should not have access), etc.

Key systems have a life span, just like people. A poor key-control policy (or one that is not maintained well) will dramatically shorten the life of any key system.

Patents, Anyone?

Though confusing to some, the concept of patents is simple: a government granted right to an invention for a set number of years. Here's the dictionary's definition, once again:

patent *(n.) - the exclusive right granted by a government to an inventor to manufacture, use or sell an invention for a certain number of years*

Sometimes the mark may read "Pat. Pend." (patent pending), which indicates that the inventor has applied for the patent and is in the process of securing the legal protection. But, institutional locksmiths must also know that there are two types of patents of concern to the locksmithing industry: design patents and utility patents.

Design Patent

A design patent is granted to protect part of an object that is recognized as being unique in design. They have a 14-year life and are nonrenewable. When one is trying to obtain a design patent for a key blank (one of the most common in the industry), for example, and the bow is of a different shape but functions the same as other keys, a design patent may be issued.

Utility Patent

A utility patent is granted when the object meets three requirements:

1. **Novelty:** It must be a brand-new idea that has not been described in any printed publication anywhere worldwide.
2. **Utility:** It must be both functional and useful.
3. **Non-obviousness:** It must be an idea that is not obvious to an individual having ordinary skill in the area of technology related to the invention.

Utility patents can cover original key designs and cylinder designs (e.g., Kaba Peaks key and cylinder, which meets the criteria listed above). These patents have a life of 20 years from the date of application or 17 years from the date of granting, whichever is greater. They cannot be renewed.

Figure 1 shows utility patents for a wide range of security systems that should be of interest to the institutional locksmith.

To prevent confusion, I'll address three other types of legal protection: trademark, service mark and copyright.

Trademark™

The trademark symbol is used by a company to identify it as the originator of a

Various Lock & Key Patent Dates*

Brand:	Patent Type:	Expiration:
Abloy Protec 2	utility	2031
Schlage Everest 29	utility	2029
ASSA Maximum+	design	2029
ASSA Maximum+ Cliq	design	2029
Sargent Degree	utility	2028
Mul-T-Lock Interactive+	utility	2028
Medeco KeyMark x4	utility	2027
BEST Cormax	utility	2027
Mul-T-LockMT5+	utility	2025
Abloy CY416 R- Core	utility	2024
Kaba Peaks – Preferred	utility	2024
Schlage Primus XP	utility	2024
Sargent Keso F1	utility	2024
Mul-T-Lock Integrator	utility	2024
Kaba Peaks – Global	utility	2023
Arrow CHO*ic*E	utility	2022
Sargent XC	utility	2021
ASSA Cliq Twin Maximum	design	2021
Medeco M^3	utility	2021
BiLock NG	utility	2021
Scorpion CX-5	utility	2019
Abloy Protec	utility	2019
Corbin Pyramid	utility	2017
BiLock Q-Core	utility	2017
Lori L10	utility	2016
BEST MX8	utility	2015
ASSA Twin Pro	utility	2014
Schlage Everest	utility	2014
Schlage Primus/Everest	utility	2014
Mul-T-Lock Interactive	utility	2014
Sargent Signature	utility	2014
ASSA Twin Exclusive	utility	2014
ASSA Twin Maximum	utility	2014
ASSA Twin V-10	utility	2014
Kaba Gemini T	utility	2012
Arrow Flexcore	utility	2012
Medeco KeyMark	utility	2011
Yale KeyMark	utility	2011
Kaba Peaks – Classic	utility	2008
BEST Peaks – Classic	utility	2008
Mul-T-Lock	utility	2007
Kaba Gemini	utility	2006
InstaKey	utility	2005
Schlage Primus	utility	2005
Medeco Biaxial	utility	2004
Abloy Disclock Pro	utility	2004
DOM ix	utility	2000
ASSA Twin 6000	blank design	1999
Emhart High Security	utility	1995
Mul-T-Lock Classic	utility	1994
Medeco Original	utility	1987

***Reference Note:** These patent expiration dates and related information have been composed from a range of sources, including the U.S. Government Web Site for Patents & Trademarks, manufacturer's printed/verbal information and a variety of articles appearing in trade journals. *REV: 07/020/20*

Figure 1. This list shows a wide range of lock and key patent dates.

product or service. A trademark is a proprietary term that is usually registered with the Patent and Trademark Office to assure its exclusive use by its owner. Lock manufacturers often use a trademark associated with their products or corporate identity. For example, the Schlage Everest key has an identifying "mountain-like" trademark on its blade.

Service Mark℠

A service mark is similar to a trademark. However, it usually involves a word(s) or term in conjunction with a graphic trademark. It is a proprietary term, such as "Blue Cross and Blue Shield" or "American Express."

Copyright©

Material that is copyrightable involves literary, musical and other artistic works. In the lock world, that would include such items as locksmithing books, distributor pamphlets, technical manuals, product catalogs, etc.

UL 437 Explained

When the UL trademark is displayed on a cylinder, one should be aware that it has certain attributes. Within the lock and security field, having UL 437 recognition indicates a high security cylinder that can endure a variety of tests. Those letters and numbers indicate a cylinder that can withstand certain levels of physical attack and pick resistance, and can pass a range of other tests.

Underwriters Laboratories, Inc. (UL) is a nonprofit, independent organization founded in 1894 that is dedicated to testing products for the public's safety. It is not affiliated with any lock manufacturer or for-profit entity. Underwriters Laboratories, its subsidiaries and affiliate operations test products worldwide for quality assessment and certification standards. UL acknowledges that to achieve a high level of commitment, conformity in testing procedures and standards must be maintained.

Within its more than 1,000 standards, UL 437 is of most interest to lock manufacturers and institutional locksmiths — and should be of interest to the informed public as well. This standard evaluates whether a "locking cylinder" can display the UL trademark. However, not all UL listed products are necessarily UL tested. In addition, a UL listing is not a certification — it's simply a listing.

The UL 437 standard addresses door locks and is intended to set the standard for protecting against unauthorized opening by picking or drilling the lock, to name a few criteria. UL defines it this way:

"Door locks are locking assemblies for use on doors of stores, buildings, residences and the like, to resist unauthorized opening by jimmying the door, picking/impression techniques or drilling the lock cylinder or assembly, sawing or drilling the lock bolt, pulling the lock cylinder or other methods involving the use of small hand tools."

The standards are set by UL, and each cylinder must withstand a battery of difficult tests.

Out-of-Patent Possibilities

No one is saying that out-of-patent products couldn't be used in high security settings, especially where key control is the main concern. Products readily available in the USA such as Scorpion CX-5 (2019), Corbin Russwin Pyramid (2017), ASSA Twin Pro (2014), Arrow Flexcore (2012) and Kaba Gemini (2006) are possible choices — especially because running out of patent protection does not necessarily mean that aftermarket keys will be produced.

Many of the manufacturers of these once-patented locking systems still have very tight control over these restricted key blanks and issuing cut keys from the factories.

Some still-existing high security systems may be older — such as Yale Security, Corbin Russwin Emhart, etc. — where key control may be of only a moderate concern. Also, do not forget the abundance of overseas high security locks that exist: Brahma (England), CISA (Italy), EVVA (Austria), Miwa (Japan), Dom (Germany) and Fichet (France), to name a few.

Let's take a look at 10 popular high security systems offered throughout the United States, in order of patent expiration dates (those expiring first will be discussed first). Again, these are by no means all of the available systems, just a sampling of different types at varying price points. One of them might be the perfect solution for your institution's high security and key control needs.

Each system has an overview section to show the basic product line and some of its unique features. That's followed by technical data showing some of the nitty-gritty details of these systems and, finally, a few conclusions. These systems include: BiLock NG, Kaba Peaks Preferred, Medeco M3, BEST Cormax, Corbin Russwin Access3, Sargent Degree, Mul-T-Lock Interactive+, Schlage Everest 29 SL, ASSA Maximum+ and Abloy Protec2.

BiLock NG

Those feeling more intrepid about their high security choices should investigate BiLock products. They are UL 437 high security and offer excellent key control. No one but a BiLock dealer (or the factory) can cut this unique key. The DIY stores are simply out of luck.

Many lock manufacturers have created new products in their day: Yale, BEST,

Figure 2. A BiLock deadbolt is shown with its keys.

Figure 3. BiLock has a wide range of products.

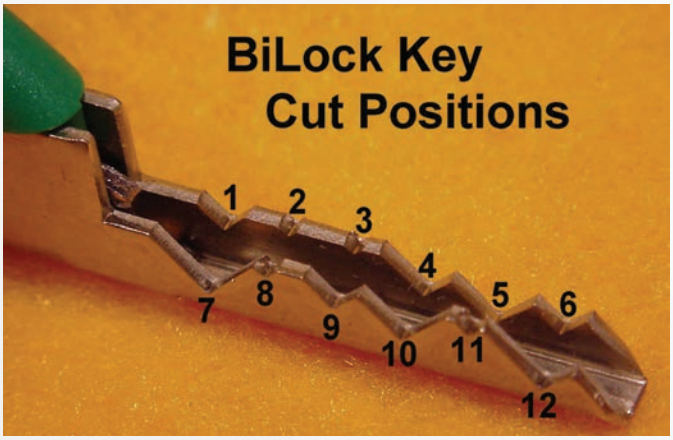

Figure 4. BiLock key cut positions are shown.

Figure 5. BiLock key heads come in a variety of colors.

Medeco… and the list goes on. Perhaps none have created a key with a more modernistic look and feel than that of BiLock (*Figure 2*). With high security and a plethora of product options, this true winner is used extensively in the gaming and casino industry as well as in commercial, institutional and residential applications. One of the reasons is BiLock's high pick resistance.

System Overview

According to BiLock, there are claims of people picking a BiLock cylinder. Within the 12 tumblers there are "dummy holes" to prevent manipulation attempts. But in every case they've researched, the operating key was already in their hand, and they refused to let BiLock examine the lock. This leads BiLock to conclude that the locks were "modified" to make them look easy to pick.

BiLock asserts that they have yet to personally witness any original BiLock cylinder being picked without a key, thus they claim it to be "pick-proof."

This pick-proof feature is one reason BiLock is an internationally acclaimed high security locking system in use by government, university and hospital facilities that require the utmost security. In addition, almost every major casino uses BiLock to protect their assets.

BiLock's product overview (*Figure 3*) includes:

- Cylinders: mortise, rim, knob cylinder, European profile and IC
- Hardware: KIK and KIL locksets; padlock; deadbolts; and cam, switch, cabinet, vending, showcase and push locks
- QC I-Core; large format interchangeable core
- Retrofit for Schlage LFIC

Technical Data

One unique feature of the BiLock cylinder is that the locking mechanism and related keys have two parallel sides, each containing six positions/cuts. It's based on 12 pin chambers and two sidebars (*Figure 4*).

With 12 pin tumblers in each lock, the master keying potential for useable bittings is staggering. It allows for keying over 11,000,000 unique key combinations per keyway. More than 500,000 changes are available under a simple grand master system.

For those who are color-conscious or need to coordinate keys in groups, the plastic key heads that are attached when generating a key come in a plethora of colors (*Figure 5*). This can be a fantastic attribute for a large institution where groups of masters and changes can be easily color-coded for quick identification.

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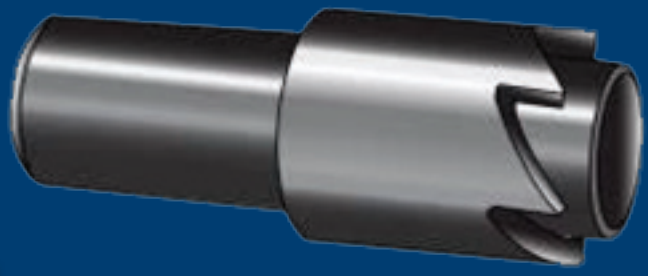

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Figure 6. These are the components of the BiLock LFIC.

Figure 7

Figure 8

Figure 9

Figures 7-9. BiLock keys exist in three configurations: First Generation (FG) (*Figure 7*), Second Generation (SG) (*Figure 8*) and New Generation (NG) (*Figure 9*).

Figure 10. This image provides an exploded view of the BiLock QC cylinder.

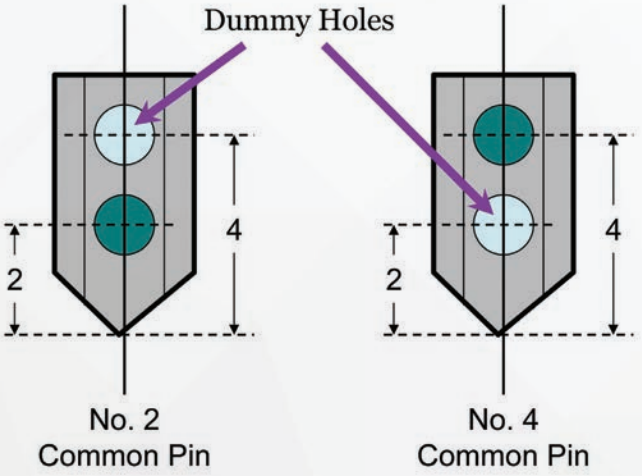

Figure 11. This graphic shows the #2 and #4 BiLock common pins.

The BiLock LFIC

Many institutions use interchangeable cores for convenient changes at a moment's notice. This is also possible with the BiLock product line.

The BiLock large format interchangeable core is unlike most other ICs in shape (*Figure 6*). It operates differently as well. What makes this locking device mechanically different from conventional pin tumbler cylinders is that only one pin is used per each of the 12 chambers.

In a standard cylinder, one shear line is created between the bottom pin and the pin above it. In a BiLock cylinder chamber, there is only one pin and a spring. No shear line is created there. Instead, two shear lines are formed by the two sidebars. When the indention on the side of the bottom pins (actually, a combo bottom/master/top pin) allows the side bar

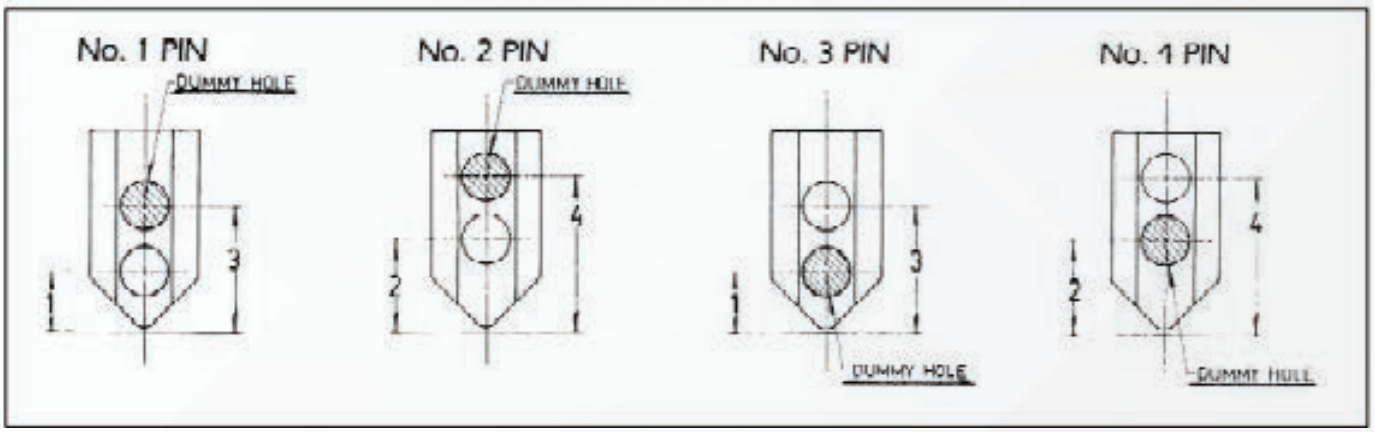

Figure 12. There are four BiLock common pins.

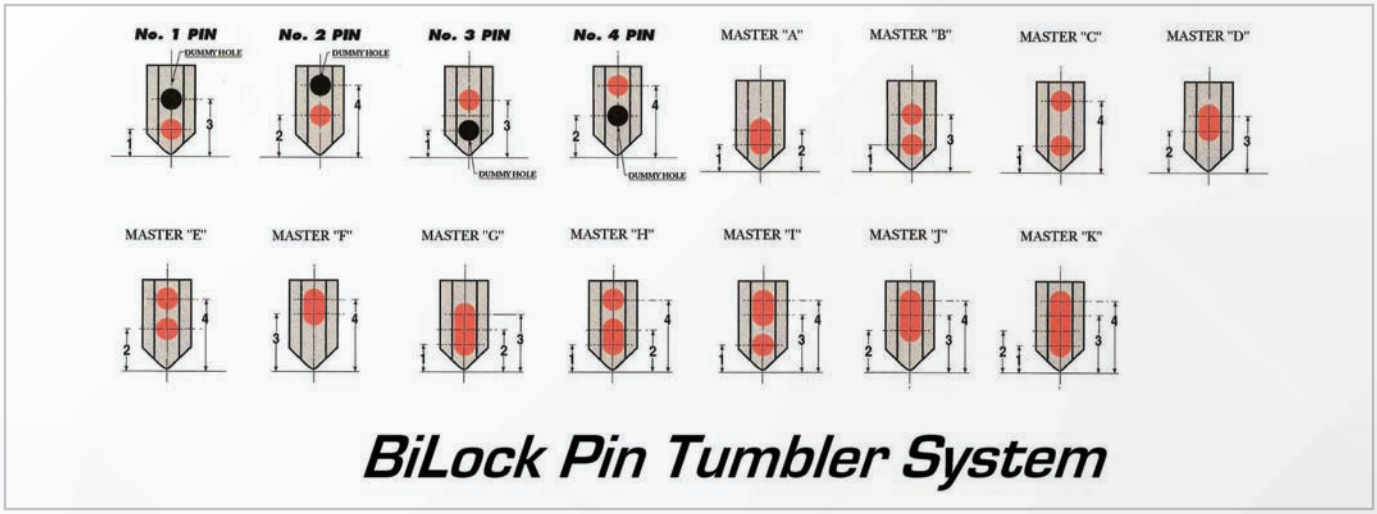

Figure 13. Here, you can see all of the pins in the BiLock pin tumbler system.

shafts to enter, the plug can turn. Thus, there are four possible depth positions (or combinations thereof) that can be used on a pin or a key.

The BiLock NG patent (No. 6,681,609) was issued on January 27, 2004, and includes developments on the New Generation core and keys. These components are in the key and the interlocked pins that block a side bar from depressing.

The newest patented version NG (expiring in 2021) eliminated the movable trigger and restructured the key near the bow area to create additional keyway possibilities.

The BiLock QC core fits into all BiLock hardware configurations, including key-in-knob, key-in-lever, mortise, rim, OEM cabinet, cam lock cylinder housings, etc. The QC system was patented in the United States in June 2000. It was also recognized by the industry with a design award for the unique engineering that combines high security with a convenient interchangeable core.

Generational Differences

BiLock keys exist in three configurations: First Generation (FG) (*Figure 7*), Second Generation (SG) (*Figure 8*) and New Generation (NG) (*Figure 9*).

The Secret's in the Pins

Creating the operating shear line via the key is accomplished by the correct vertical alignment of the 12 pins. This, in turn, permits the two separate sidebars to retract into the plug, allowing it to turn. Note: The pins are oval-shapes. They do not rotate in the chamber. *Figure 10* illustrates this through an exploded view.

Pictured in *Figure 11* are a #2 and a #4 pin, also called a "common pin." The depth cuts for these pins are a 2 cut and a 4 cut. The dummy hole that is placed in each is a false hole to prevent manipulation. It serves no other purpose. There are four common pins: #1 through #4, as shown in *Figure 12*.

The master pins — likened to a combo bottom pin and master pin — are named with letters, #A through #K. *Figure 13* illustrates the complete pin system.

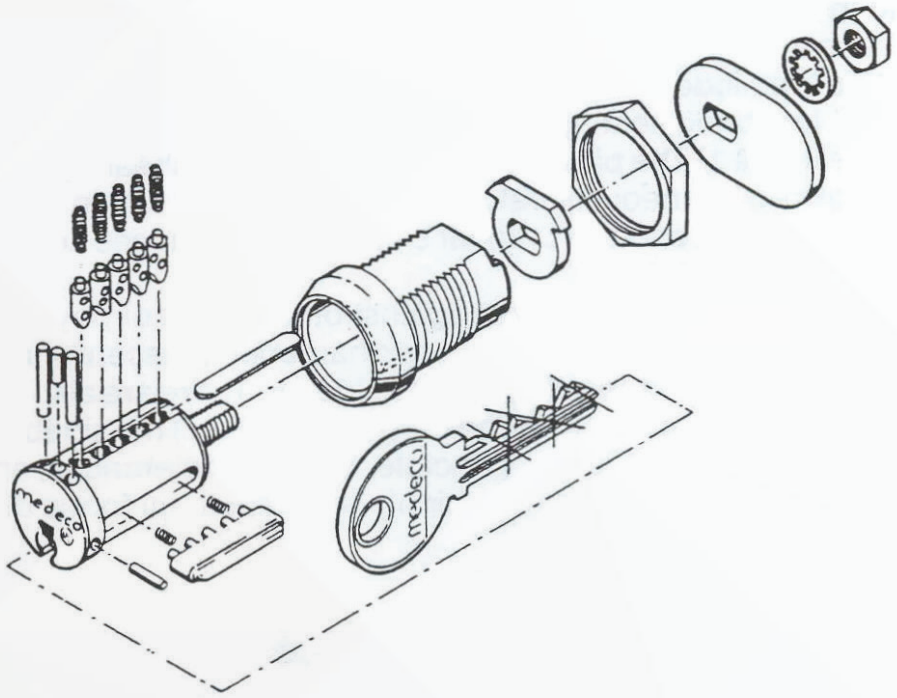

Figure 14. This image provides an exploded view of a Medeco Series 60-65 cam lock.

It probably becomes clear after studying the graphic that the four pins (#1 through #4) can only allow one key cut position to accept the side bar. They are known as common pins (CP). This would be equivalent to a bottom pin in a conventional pin tumbler chamber.

Pins #A through #K are called master pins (MP). These 11 arrangements have multiple positions (dimple areas) that can accept the sidebar based on key cut combinations. This might be compared to a bottom pin and a master pin(s) in a conventional pin tumbler chamber.

This explains why only one of 15 possible pins can be used in any chamber to key up any cylinder within any system, whether master keyed or non-master keyed.

Because this arrangement allows for two parallel rows of six pin tumblers with four possible depths of cuts, the total theoretical combinations would be four to the twelfth power (412). That translates into 16,777,216 key bittings. Sixteen million is quite a hefty list of bittings to have in the bank!

Pin stack calculations — which are necessary to calculate in traditionally stacked cylinders — obviously do not apply to BiLock cylinders. However, master key progressions maintain a similar flavor.

Not Positional Master Keying

Just as a reminder to those experienced with master keying, BiLock is not a split-pin master keying system. Some consider it "vertical master keying." BiLock does rely on "positions" of pins, as in other keying systems.

With positional master keying, there either is or isn't an active pin in a chamber. The strategy is to systematically progress each key change throughout all of the possible "positions" so that the cuts/dimples can be placed on a key.

However, with BiLock, every chamber of the 12 will hold a pin, thus we are not rotating empty chambers (inactive ones) as we would in positional master keying, since with BiLock every chamber is active.

The definition of positional master keying is:

"A method of master keying typical of certain binary type disc tumbler key-in-knob locks and of magnetic and dimple key cylinders. Of all possible tumbler positions within a cylinder, only a limited number contain active tumblers. The location of these active tumblers is rotated among all possible positions to generate key changes. Higher-level keys must have more cuts or magnets than lower level keys."

Those who are familiar with the Medeco 60-65 series cam locks or the new Schlage Everest SL will see a close relationship with

"JUST AS A REMINDER TO THOSE EXPERIENCED WITH MASTER KEYING, BILOCK IS NOT A SPLIT-PIN MASTER KEYING SYSTEM."

BiLock keying. *Figure 14* provides an exploded view of a Medeco cam lock. It illustrates a locking mechanism that contains all tumbler springs and pins within the confines of the plug only. As in BiLock, the rotation of the plug is blocked by the sidebar, which protrudes into the shell — though BiLock uses two sidebars: one on each side of the plug, allowing for 12 unique active chambers.

Final Thoughts on BiLock

Go to Canada, the United States or even Australia — BiLock is there. Customers love its look, ease of use, security and colorful and unique key design.

Distributors are also talking. Ed Woods, CML, CPS, CAL, a BiLock distributor, says of BiLock, "BiLock was a perfect fit for the casino market in my area. The products designed for that part of the market have been my best sellers in quantity sales. Most of the rest of my customers are the ones and twos for storefront customers. Overall, a great product."

With their national advertising, eye-catching literature, interactive website and variety of new product releases, BiLock continues to secure the world with its innovative, yet practical high security locking system. And it's "bump-proof!" Perhaps it could be a good fit for your institution.

Kaba Peaks Preferred

The story of Kaba began neither in Connecticut nor New England. We must travel overseas to Switzerland and back to the year 1862, when a locksmith shop and cash register factory was established in Zurich. The owner and creator was named Franz Bauer (1839-1908). He would be the "key" factor in a company that is now world-renown and a major player in the field of high security locking devices.

Bauer developed his skill in safe building (a security area also emerging in the United States at the same time) and called his company Kassa Bauer — or, translated into English, Bauer Safe. The name Kaba is a contraction of this legendary beginning:

Figure 15. Here is a Kaba Gemini removable core with control key inserted.

Figure 16. This photo shows a Kaba Gemini operating key. Note the dimples.

Figure 17. The Gemini control key has an altered tip.

"ALL TOO OFTEN, CUSTOMERS AND SOME SECURITY PROFESSIONALS CONFUSE KEY CONTROL WITH HIGH SECURITY."

Kassa Bauer. In 2001, Kaba acquired The Unican Group. The merging of these access control industry leaders has created a worldwide provider of access solutions. Ilco-Unican, previously the Kaba-Ilco Corp., is now known as dormakaba ILCO.

Before we look at the Peaks Preferred system, it may advantageous to take a cursory look at Kaba Gemini. This system is used in institutions all over the country and could be right for you.

Kaba Gemini

Kaba Gemini can provide a somewhat strange experience for many institutional locksmiths because it uses the dimple system commonly found in Europe. Key control is a natural for this system, though a special key machine is required for placing the dimples on the keys (*Figure 15*). The keys are read by dimple positions on the sides of the blade and on the upper edge of the blank (*Figure 16*). The sides are typically mirror imaged, so the key can be inserted into the lock in either direction.

The factory can assist the locksmith in preparing or extending an existing system. Kaba Gemini uses positional master keying. This is different from the traditional total position progression or rotating constant method that is used by most U.S. pin tumbler master keyed systems.

Those familiar with the older Schlage wafer system will quickly understand the workings of the Kaba Gemini positional master keying system.

Gemini also comes in the removable core format, allowing for quick core changes (*Figure 17*). The Gemini system is field serviceable and still available.

Figure 18. The "circle of Peaks" shows how one key can operate all cylinders within the system.

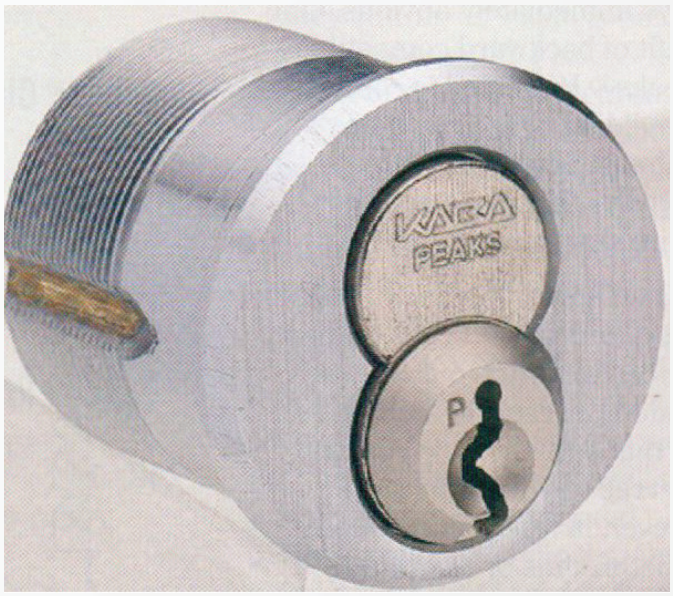

Figure 19. The Peaks Preferred SFIC is in a mortise hosing. Notice the "P" on the core's face.

Figure 20. Take note of the small raised peak on both the top and the bottom of the key.

Kaba Peaks Preferred

Taking a 180-degree turn, Kaba — often unofficially called the "Father of Retrofits" —developed Kaba Peaks (*Figure 18*). The system provides an ingenious and cost-effective way to integrate the Kaba Peaks products into existing IC and non-IC hardware while maintaining strong key control capabilities within an institution. We all know the massive cost of replacing an entire locking system… the hardware is expensive. Kaba Peaks was carefully designed to eliminate that cost factor by retrofitting their fixed cylinders, LFIC and SFIC products under the dome of a single keying system.

The original Kaba Peaks patent expired in 2010. However, the Kaba Peaks Preferred patent extends until 2024 and is backward-compatible with the Classic and Global Peaks products. Cylinders can be identified by the letter "P" located on face of the plug (*Figure 19*). Also ILCO has renamed the brand as Peaks Preferred in its current promotions and literature.

The concept of "peaks" involves a small raised peak on the upper and lower portion of the key (*Figure 20*) that interacts with a small pin chamber literally outside of the area flush with the cylinder housing.

This "peaks" chamber must become shear in order for the key to turn when all of the inner chambers are also at the shear line. The keying system used is the traditional SFIC in either A2 or A4 increments. There are some differentiations for bottom pins in Corbin Russwin and Schlage retrofits, based on plug diameters. Kaba also recommends using its OEM pin kit, as the bottom pins are .003" shorter than conventional SFIC pins.

The Peaks family includes rim, mortise and key-in-knob cylinders, along with retrofits for LFICs covering Corbin Russwin, Sargent, Schlage and Yale. The two types of SFICs (slide cover and individually capped chambers) are also available.

Figure 21. This photo shows the Peaks Preferred large format IC retrofit for Yale.

Figure 22. The Peaks Preferred SFIC for slide cover (Falcon) format is shown.

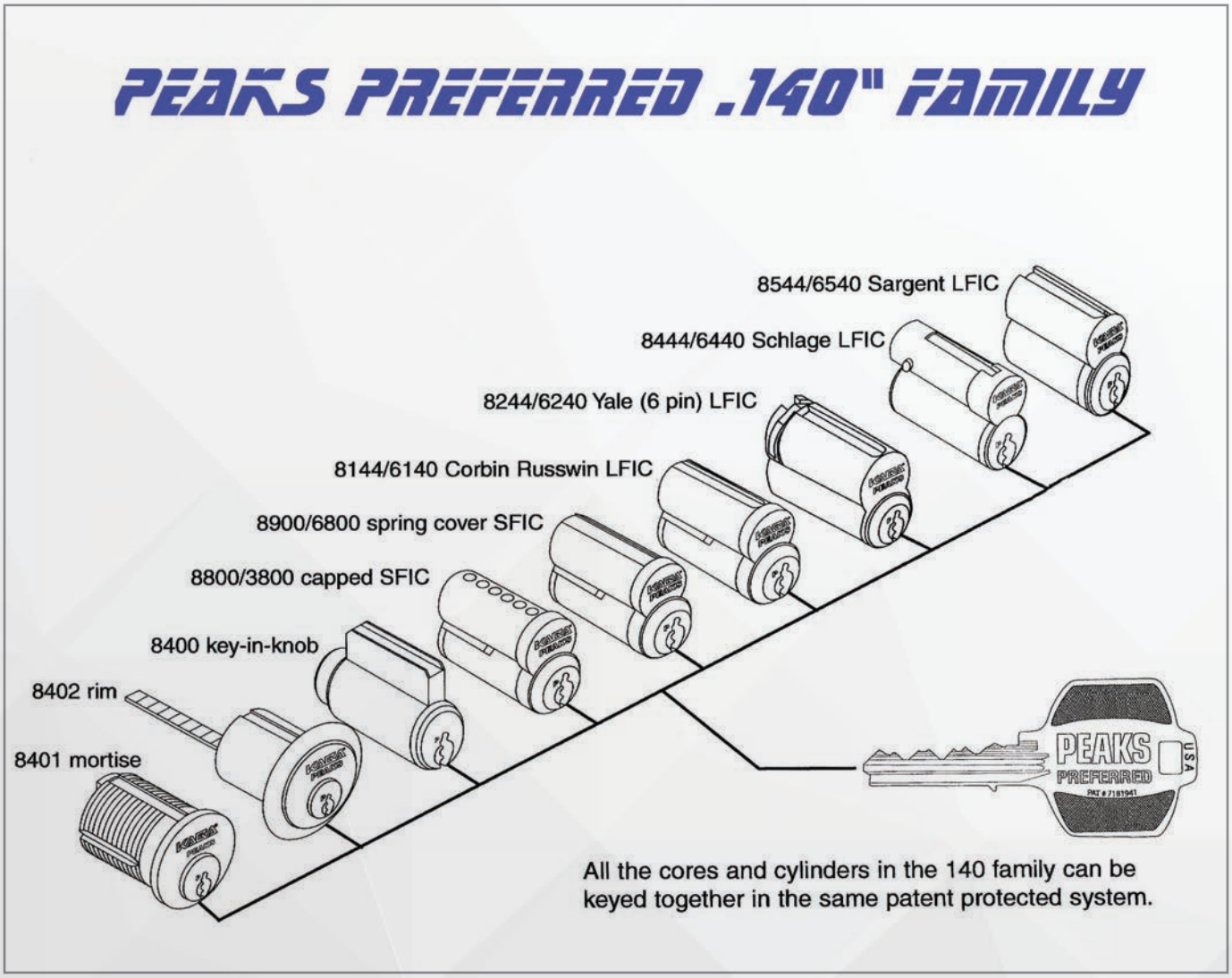

Figure 23. This graphic represents the complete Peak Preferred .140" family of cylinders.

System Overview

The Kaba Peaks product includes Peaks Classic, Peaks Global (discontinued) and Peaks Preferred. The Kaba Peaks Classic line was developed from the previously existing Kaba Gemini line and was introduced in 1990. The inventor of the Peaks concept was the well-respected inventor and lock historian Tom Hennessey.

The Kaba Peaks Classic line was the first retrofit system to be able to interkey conventional (fixed) cylinders, large format retrofit Yale (*Figure 21*), Corbin Russwin, Schlage and Sargent cores as well as SFICs without housing alteration (*Figure 22*). Its intent was to introduce a patented key-control product without the need for expensive secondary locking mechanisms within the cylinders. Thus, Kaba was the first in the United States to do so.

The beauty of this system was that one needn't know the keying procedures for each of those manufacturers, but instead could rely only a single, simple, easy-to-understand keying procedure that uses small format IC principles.

The small "peaks" on the top and the bottom of the patented key protect the cylinder from unauthorized operation, and all products within the Peaks 140 family can easily be used with a single key. *Figure 23* shows the complete Peaks Preferred line.

Technical Data

The Kaba Peaks Preferred line was developed as the "Next Generation of Peaks," providing a product patent through the year 2024 (Global through 2023 and Classic through 2008).

The Patented Peaks

As mentioned, two small projections called "peaks" exist on the key blade near the bow — top and bottom. When the key is fully inserted, the upper peak will engage a special pin chamber at a second shear line located at the top face of the cylinder, just before Chamber #6. The chamber will "clear it" for operation if the correct combination is cut onto the key.

This special Peaks pin chamber will be installed by the locksmith in an uncombinated conventional fixed cylinder or LFIC composed of a patented top pin, patented bottom pin, a spring and — in some cylinders — an additional 7B top pin.

With the Peaks Classic only, the bottom peak of the key rides in a groove within the scalp. Without the bottom peak, the key will be trapped at the 180° position. Both are patented and must work together with the correct key combination for the cylinder to operate. SFICs have the patented pin stack already staked into place at the factory.

The new peaks pin has a recess on the bottom that must match the new peak found on the Peaks Preferred key (*Figure 24*). If a Peaks Classic or a Peaks Global key is inserted into a Peaks Preferred cylinder, it will not operate the cylinder.

The Preferred key is backward-compatible with the Peaks Classic cylinders and was designed to retrofit the majority of other manufacturers' ICs.

It tends to be a cost-effective keying system, blending LFICs, SFICs and conventional fixed cylinders into a single keying system while providing patented key control (*Figure 25*).

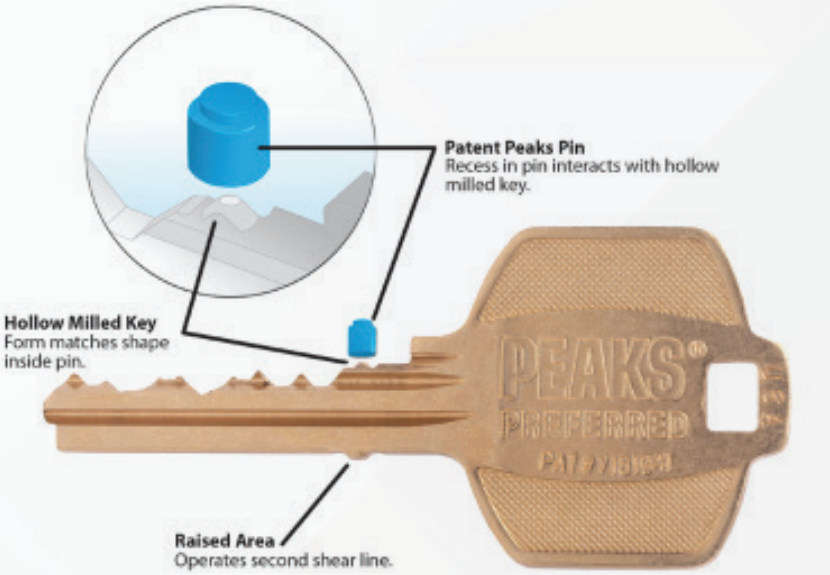

Figure 24. This image illustrates how the new patented Peaks Preferred cylinders and keys operate and relate to backward compatibility

Cylinders

The special Peaks pin chamber is located behind the face of the plug. The cylinder sleeves and shells are manufactured in a two-step process. It involves special plating and cladding on the sleeves and shells that strengthens these components, making them more durable than conventional brass surfaces. All Peaks cylinders are top loaded for convenience.

Testing Data

A variety of mechanical tests have been done on Peaks cylinders, and the cores and cylinders exceeded 500,000 cycles with no measurable wear on the sleeves or shells. For those who may be using Peaks cores in corrosion-prone saltwater locations, the standard ASTM B117 Salt Spray Test for trim is 200 hours. When exposed

Figure 25. This line-up reinforces the unique retrofitting capability of the Peaks Preferred line.

for more than 300 hours, all Peaks keys worked, even before lubrication. After lubrication, the cores worked like new.

Keying Specs

If you are familiar with SFIC A2 or A4 systems, Peaks will be a breeze. SFIC is done almost exactly the same way, although the pin stacks are larger in fixed cylinders due to plug variations and shell dimensions.

Beware of the BPs!

The SFIC bottom pins for Kaba Peaks are .003" shorter than with traditional SFIC pins. Manufacturers advise that you use the OEM pin kit, especially for bottom pins. Because the increment is so close to the tolerance variation, cores may not operate or be extremely difficult to operate.

Combinating Peaks Preferred — Easy as Cake!

For those of you who are not fans of reading tech manuals, ILCO has something for you. It has a set of short videos on its YouTube channel so you can watch, learn and combinate quickly. Here is the link that will take you to the combinating specifics of Peaks SFIC, Peaks KIK, Peaks Mortise and Rim, Peaks CorbinRusswin LFIC, Peaks Sargent LFIC, Peaks Yale LFIC and Peaks Schlage LFIC.

Final Thoughts on Kaba Peaks Preferred

Of the numerous lock patents that have been filed over the decades, Peaks is one of the simplest and most effective patent designs, in my opinion.

Why? It's quite easy for someone to remove something from a key (i.e., filing, grinding, cutting, etc.), but extremely difficult to add material to a key — that is, the "peaks."

The Kaba Peaks Preferred patent runs through 2024. This information is important to the institutional locksmith, especially when considering products that provide key control for specified periods.

Additionally, since SFIC is so prevalent, little adjustment is needed to use this product line and take advantage of its immense offerings for retrofitting existing hardware within a facility.

The next installment in this series will discuss Medeco3, BEST Cormax and Corbin Russwin Access 3 systems.

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.

Working With AUXILIARY AND OFFICE FURNITURE LOCKS

Sal Dulcamaro details his experiences with these types of locks in a hospital.

Most locksmiths don't have issues with working on or fitting keys to auxiliary or furniture locks. As a commercial locksmith, I didn't have many calls about them, and residential customers often balked at the price. The customer often felt that not being able to lock a filing cabinet was preferred over paying more than a few dollars to make a key. I think the mentality is that since the cost of the lock is relatively small compared to much more expensive door hardware, the cost of fitting keys to that lock should also be very small, regardless of the amount of time required.

Even commercial customers often had a similar mentality. Occasionally, if the trip charge was also applied to other lock work, the cost became more tolerable. I presume there is some psychology behind the thought process where making a key for something shouldn't approach the rough cost of the item itself.

I found different circumstances as an institutional locksmith. Whereas auxiliary locks were a tiny fraction of the work I did as a commercial locksmith, they were almost as much a part of my job as working on door hardware as an institutional locksmith.

Some days, all I did was work on auxiliary or office furniture locks. While I was already knowledgeable about and skilled at fitting keys to auxiliary and furniture locks, my experience greatly expanded in the institutional setting and evolved from fitting keys and unlocking to actual furniture repair.

Many auxiliary and furniture locks have code numbers either stamped or engraved on the lock face (see *Figures 1-5*). Occasionally, I'd have a commercial customer whose file cabinet was missing a key, and in some cases, it was already locked. I have a policy of not making keys by code for locks with visible codes on the lock's face unless I can verify ownership.

I could have potentially made a key by code where the customer could pick up the key and not have to pay a trip charge. But unless they could physically bring the lock to me, I wouldn't make the key by code. I would explain that anybody could walk past that lock, copy the code number and ask me to make a key to a lock that didn't belong to them. I explained that my policy was to protect the true owner of a lock and not make a key for someone who shouldn't have access.


Figure 1

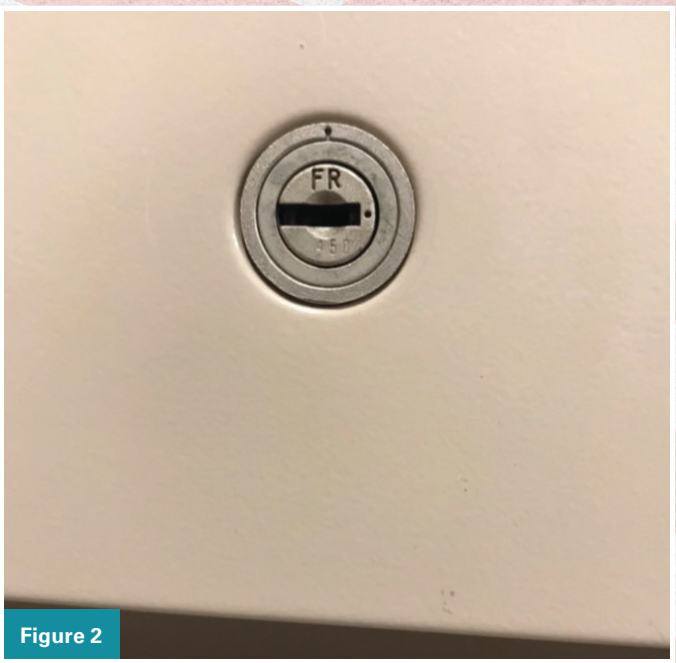

Figure 2


Figure 3


Figure 4


Figure 5

Figures 1-5. Many auxiliary and furniture locks have code numbers either stamped or engraved on the lock face.

Unfortunately, that would add the cost of a service call, and that extra cost often made a customer decide not to have the key made. In many of those cases, if the file cabinet was unlocked already, they would just leave it unlocked. If it was locked without available keys, the person would sometimes use force to unlock it, making it no longer functional.

As an institutional locksmith at a hospital, there were numerous shared offices that needed to lock and have secure cabinets and drawers. When a key was lost and no code was visible, I could make a key without any hesitation. I didn't have to drive a few miles to check out the job; I'd just walk down a few hallways and take an elevator in most cases.

Installing Auxiliary Locks

Often, people would need locking functionality added to cabinets or drawers. Though rare commercially, installing cabinet locks was pretty routine in the institutional setting. The setups and configurations were kind of all over the place. Sometimes it would just be a single cabinet or drawer, but often, it would be

Figure 6. Many of the upper cabinets the author worked on were wood.

Figure 7. The author often worked on a variety of upper and lower cabinets and drawers in the same office.

Figure 8. The author kept a few different brands and styles on hand, such as tumbler versions of plunger-type locks on the side of a drawer unit.

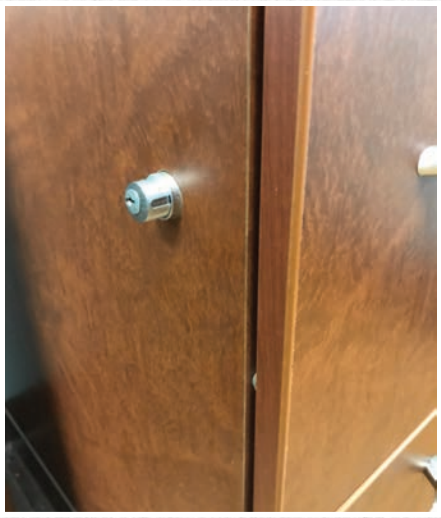

Figure 9. This is a pin tumbler lock.

Figure 10. This cabinet is drilled to accept a cam lock.

multiple items. Some were upper cabinets (mostly wood) (*Figure 6*), while others were a combination of upper and lower cabinets plus drawers (Figure 7).

Most were the same four or five types of locks in a single standard size. I carried four brands so all locks on drawers and cabinets in each location could be uniform. There were a few different brands and tumbler versions of plunger-type locks (*Figure 8*) that I was able to install on the side of a drawer unit. A closer view (*Figure 9*) shows that it is a pin tumbler lock. I also had disc tumbler versions of this style plunger lock that was less pick-resistant.

Most of the auxiliary locks I installed were pin or disc tumbler locks operated by a conventional key. Occasionally, I was asked to install a digital lock on a cabinet or drawer, but those were fairly expensive. When they wanted to save more money, they'd ask for one of the less expensive mechanical combination locks.

The cabinet in *Figure 10* is drilled to accept a cam lock. Many inexpensive cam locks use a spur washer to secure the lock to the cabinet door. This is a special kind of spur washer that has the spurs to grip the wood but also holes for screws that secure it and prevent forced rotation.

Figure 11 shows a mechanical combination lock that uses a reset key to change the combination. It mounts on the inside and is secured by a nut (*Figure 12*), like most cam locks.

The cam has been attached at the back of the lock in *Figure 13*. There are usually at least two styles of cams included with most cam locks. You can see the combination lock on the outside of the cabinet door, rotated to the unlocked position. One limitation of most mechanical combination locks is that, unlike most electronic ones, you can use only one combination at a time, and you need to

Figure 11

Figure 12

Figures 11 and 12. *Figure 11* shows a mechanical combination lock that uses a reset key to change the combination. It mounts on the inside and is secured by a nut (*Figure 12*), like most cam locks.

Figure 13. The cam has been attached at the back of the lock.

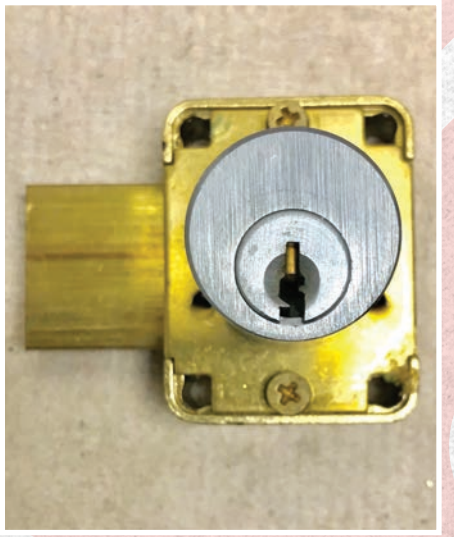

Figure 14. This image shows a Corbin pin tumbler auxiliary lock that the author had to take apart.

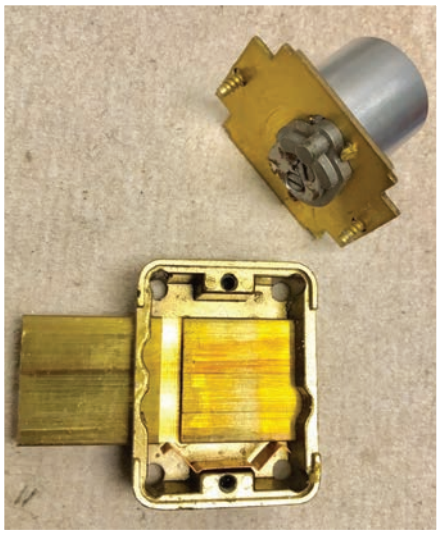

Figure 15. The author separated the lock cylinder unit from the case that contained the locking bolt.

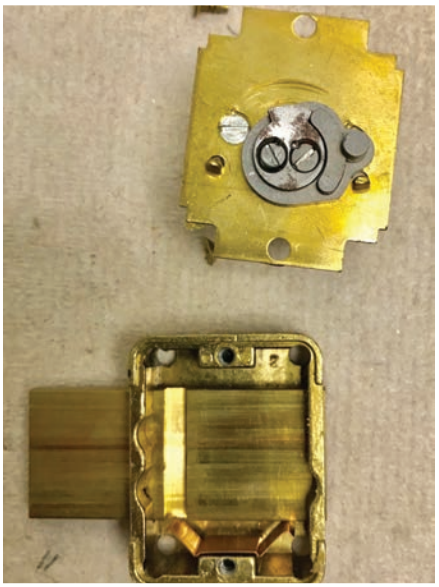

Figure 16. The lock cylinder unit is on top.

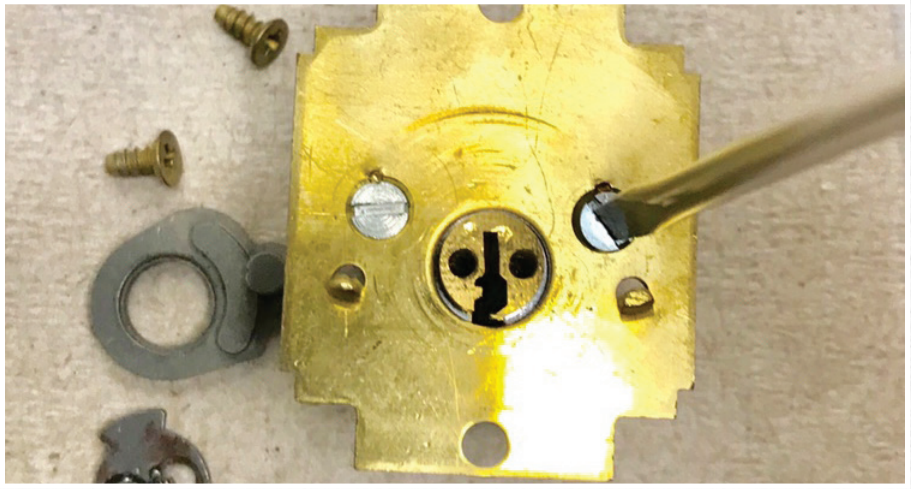

Figure 17. After removing the cam, the back plate has two staked screws that need to be removed.

Figure 18. The lock cylinder is now separated.

manually rotate the numbers when relocking to avoid revealing the combination. Obviously, with electronic locks, you pay extra for those features and more.

Rekeying Auxiliary Locks

Auxiliary locks typically have special tumblers that must be used. I usually order them keyed alike if the internal client wants the locks to work on the same key. I didn't often have to rekey them.

The hospital had mostly a few standard brands and models, but there were enough odd locks that I didn't have service kits to just rekey the lock to a specific key setting.

Figure 14 shows a Corbin pin tumbler auxiliary lock that I didn't have a tumbler kit or servicing tools for. To rekey five locks, I had to take each apart in steps to access the lock cylinder. First, I separated the lock cylinder unit from the case that contained the locking bolt (*Figure 15*). The lock cylinder unit is on top (*Figure 16*) and has to be disassembled further to access the cylinder. After the cam is removed, the back plate has two staked screws (*Figure 17*) that need to be removed. The lock cylinder is now separated (*Figure 18*). I don't show it, but I ended up shimming the lock plug and using a drill bit as a plug follower. I didn't have a service kit, so I swapped tumblers to make it work on a different key and then reassembled the lock.

I had several service kits for a variety of auxiliary locks. Most were disc tumbler kits, but a few were for small pin tumblers — quite a bit narrower than those used in most commercial door locks. I had

Figure 19. This service kit included tumbler chamber covers (identified in the kit as tumbler retainers), the various top and bottom pins, plug retainer pins and tumbler springs.

Figure 20. The author is drilling a small hole through the retainer in line with a pin chamber.

Figure 21. The drilled hole allows a narrow tool to be inserted to pry back the tumbler retainer and start peeling it back.

a group of National Cabinet Lock pin tumbler cam locks that were all keyed different, but someone needed a bunch of them keyed alike. These particular locks used a staked tumbler cover that covered all the pin tumbler chambers just above the tumbler springs.

The service kit (*Figure 19*) included tumbler chamber covers (identified in the kit as tumbler retainers), the various top and bottom pins, plug retainer pins and tumbler springs. The trick to rekeying these locks was to first remove the existing tumbler retainer.

Figure 20 shows a top view of me drilling a small hole through the retainer in line with a pin chamber. After doing so, I grab the retainer and pull it off the top of the lock. The drilled hole (*Figure 21*) allows me to insert a narrow tool to pry back the tumbler retainer and start peeling it back.

Figure 22. This pin ejector tool is normally used to eject pins from BEST interchangeable core locks.

Figure 23. The retainer is peeled back most of the way back to expose the pin chambers.

Figure 24. The lock has five pin chambers for potentially a five-cut key.

Figure 25. The tumbler retainer is a small, tented piece of flat metal designed to fit into a recessed slot on the top of the lock just over the tumblers.

Figure 26. The retainer fits into the recess.

Figure 27. The author used a stubby flat screwdriver to flatten the retainer into the slot.

I used a pin ejector tool (*Figure 22*) that I normally use to eject pins from BEST interchangeable core locks.

In *Figure 23*, the retainer is peeled most of the way back to expose the pin chambers. The lock has five pin chambers potentially for a five-cut key (*Figure 24*). The locks come coded either as 4-pin (as this one was) or 5-pin. The first four chambers from the front have a bottom pin, top pin and tumbler spring. The fifth chamber is empty, but if I wanted, I could fill the fifth chamber to rekey the lock as a 5-pin lock and just make 5-cut keys to operate it.

The last chamber (sixth chamber from the front) contains the plug retainer, which is the equivalent of an overly long top pin. It is designed to extend from the plug to the shell to lock the two parts together and prevent the plug from coming out of the shell. If you remove the pin, the plug will fall out of the shell. If you are just rekeying the lock, you rarely need to remove that plug-retaining pin.

Because I had a service kit, I could either reuse pins that matched the cuts of the new key or use pins in the kit of the appropriate size. The other advantage of having a service kit is that if you lose parts, you can replace them. The tumblers, springs and other parts can't be found in local hardware stores.

Without a service kit, I've had different results depending on what was lost. If I lost just one tumbler, I would often put the lock together without it. Depending on the part lost, you can sometimes work around it, but other times, you just have to replace the whole lock.

Now, back to the lock at hand. The tumbler retainer (*Figure 25*) is a small, tented piece of flat metal designed to fit into a recessed slot on the top of the lock just over the tumblers (*Figure 26*). Then you need a tool to flatten the retainer into the slot to keep it from coming back off. In this case, I used a stubby flat screwdriver (*Figure 27*). The lock is then matched to

the others and ready to be installed. I had a half dozen service kits for auxiliary locks that we frequently used. Oddball locks were dealt with on a case-by-case basis. Some could be serviced with caution, as I had no replacement parts if something broke or got lost. Others were not designed to be serviced and had to be replaced.

Repairing Office Furniture

Most office furniture in the hospital was either Steelcase or Haworth. When people moved offices, furniture would often also get moved — without keys. Most locks on those brands had code numbers, and fitting keys was the task, frequently with a twist. When office furniture lacked keys, a visible code number from the lock would often be on the work order.

To save time, I'd make the key in advance and bring it to the office for testing. The key usually worked properly. I left it for the requesting person and the job was complete. Occasionally (since the letters and numbers of the code were so small), the person would misread the code, and I'd have to go make a correct key. Other times, the key would work fine, but the drawer wouldn't lock or the key couldn't be turned far enough to pull out and leave the drawer locked.

It wasn't unusual for furniture to come without keys. They were often lost, but in a few cases, the keys were deliberately withheld because the locking mechanism wasn't working, so the keys were useless.

My alternate career as an office furniture repairman popped up when the key I made worked, but the locking mechanism didn't. I felt obliged to at least try to get it working again. Since I had no previous training in furniture repair, I had to use my instincts and natural mechanical skills to determine what was wrong and how to fix it. Some repairs were successful, and others failed. When I determined the issue (often after considerable time and effort), I would know what to do when I saw that problem again. I became quite skilled at repairs, and over time, I would often make what seemed like very difficult problems go away in mere minutes. Usually, I could make adjustments to the mechanism to get it working properly again. When parts were missing, I often gave up unless I could create my own.

A variation on repairing was office furniture lockouts. Steelcase desk drawers would sometimes lock themselves without warning, often caused by furniture movers misassembling the desk. Assembly issues also often caused the mechanism to not lock in the first place. I would typically find a desk of the same design in the office and study its construction to determine what was holding it up. The Steelcase drawer lockout problem was caused by the locking mechanism not being attached properly and an unexpected bump or vibration causing it to move into the locked position.

My first lockout of this type took me nearly an hour to figure out and open. I eventually used an old automotive Slim Jim tool to get between the drawer and the opening to slide inward and activate the mechanism manually. After numerous lockouts of this type over a few years, I could usually open a jammed drawer in less than five minutes.

Auxiliary and office furniture locks were much more significant in my work as an institutional locksmith than they ever were as a commercial locksmith.

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.

Figure 28. The retainer is now flat in the recess.

Figure 29. A side-by-side comparison shows a lock with the retainer removed, a lock with a hole drilled to remove the retainer and a lock reassembled.

THE BOLD AND THE BEAUTIFUL *of Portable Security*

Take a look at the massive Squire SS100 padlock.

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

It's big. It's bold. It's... beautiful?

I'm not sure that you could describe many modern padlocks as beautiful, but the United Kingdom-manufactured Squire SS100 Twin Cylinder Closed Shackle padlock sure comes close. You can see from the packaging in *Figure 1* that Squire bills it as "the world's strongest padlock." I don't disagree. It's so big and heavy that the inside of the box is wood-lined so the padlock doesn't punch through the box during shipping. That's big!

Henry Squire & Sons Ltd. has been in business since 1780 manufacturing padlocks, door locks and cabinet locks. By the 1920s, they decided to concentrate on manufacturing padlocks exclusively. And they're really good at it!

You can see the SS100 in *Figure 2*.

Figure 1

Figure 2

Figures 1 and 2. Squire bills this as "the world's strongest padlock."

Figure 3. The SS100 is shown next to #7 and #5 padlocks from Master Lock.

You're probably saying to yourself, "What's the big deal?" Let's give it some perspective, and you'll see what I mean.

The Details

Figure 3 gives you a better idea of how massive this monster is. In this photo, the SS100 is compared to two well-known padlocks manufactured by ALOA SPAI associate member Master Lock Company: a #7 and a #5. I think you're getting the idea now.

And, just for good measure, *Figure 4* shows the SS100 next to a common patio paver. At 9.4 pounds, the SS100 is noticeably heavier than the paver.

The next things you'll notice are the "twin cylinders" at the base of the padlock, both of which are protected by

Figure 4. The padlock is next to a patio paver to show its massive size.

Figure 5. "Twin cylinders" are at the base of the padlock.

Figure 6

Figure 7

Figures 6 and 7. You can order keys directly from Squire.

a rather tight-fitting, weather-resistant cover when not in use (*Figure 5*). Yes, this is a dual-custody padlock, and the *entire* housing of the padlock is weather-resistant.

Both cylinders were keyed alike on the unit I received, but you could easily give the SS100 the old "keyed different" treatment if needed.

The keys are shown in *Figures 6* and *7*. I was not able to determine if an aftermarket blank is available to make duplicate keys, but you can order keys from Squire. The cylinders are removable, rekeyable and replaceable. This behemoth is locksmith friendly from a service perspective.

The 20 mm (slightly more than ¾") boron alloy shackle has been removed and placed on the face of the lock to show how deeply it rests inside the body in the locked position (*Figure 8*). The Master #7 padlock has found a cozy little home in *Figure 9*.

If you intend on cutting this shackle, you better pack a lunch and dinner... and probably breakfast for tomorrow morning. It's as robust as it looks. You could practically use the shackle in a game of horseshoes. Oh, you think that you're just going to pull the shackle out of the body, do you? Well, if you can devise a contraption that can exert a pulling force of 26.4 tons (24 metric tons) to extract the SS100 shackle from its body, bless your mechanical soul.

I know what you're thinking right now: "Man, I gotta get me one of those padlocks!" I like your enthusiasm, but exceptional quality like this comes at a price as brawny as the padlock itself. The list price for the SS100 is £270, which is about $338 in good, old-fashioned United States legal tender as of this writing.

The next thing you might think is, "Where could I possibly use this lock?" Squire recommends using it on:

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Figure 8. The 20 mm shackle has been removed and placed on the face of the lock to show how deeply it rests inside the body in the locked position.

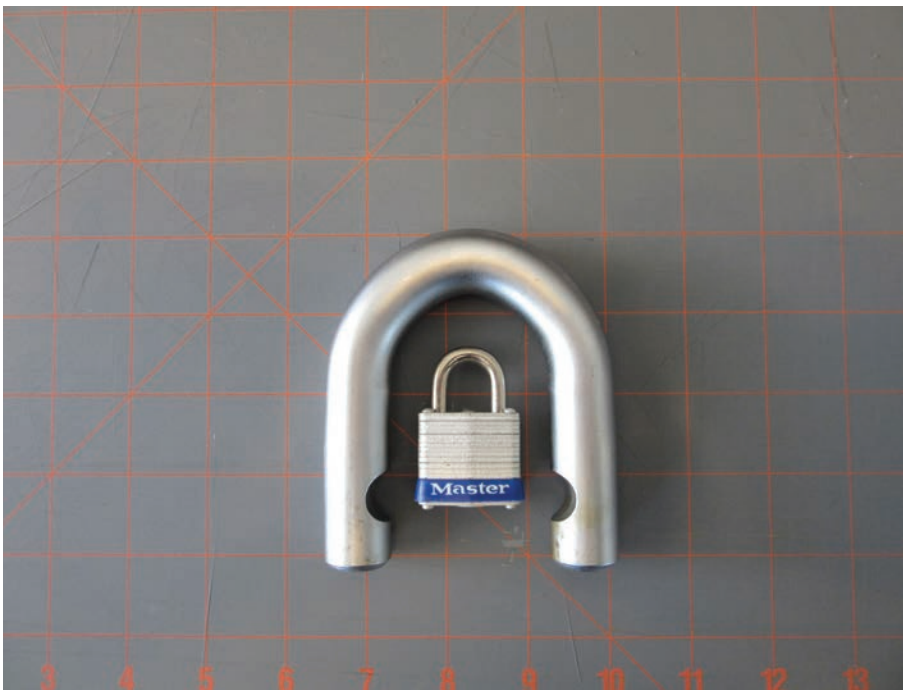

Figure 9. The Master #7 padlock is nested in the shackle.

- Garages
- Warehouses
- Lorries (what we would call a box truck)
- Perimeter gates
- Trailers and high security doors

The SS100 is decorated with a plethora of insurance certifications. It's the first padlock ever to achieve LPCB (Loss Prevention Certification Board) Level SR4, LPCB's highest accreditation (LPCB is similar to Underwriters Laboratories).

It also has a CEN 6 rating. What is CEN? Buckle up for this one: It's the European Committee for Standardization (in French: Comité Européen de Normalisation). This padlock breaks the mold when it comes to portable security.

Still interested in the SS100? Visit squirelocks.co.uk for the online catalog. The rest of the company's padlock offerings are just as impressive. And its support of locksmiths seems to be just as impressive, too.

The Squire SS100 padlock: Just don't hate it because it's *beautiful*.

Vernon Kelley, CFDI, CFL, CMIL, CPL, ICML, IFDI, LSFDI, has been involved in the locksmith and security industry since 1989 and is a licensed locksmith in the state of New Jersey. A noted instructor and editor, he's co-author of the book "Institutional Lock Shop Management." Vernon has served on the ALOA board of directors, and he is currently the first trustee of ALOA Institutional Locksmiths and director for the ALOA Scholarship Foundation. A recipient of the prestigious Lee Rognon Award, as well as the Robert Gress Award, Vernon is the supervisor of access control at The College of New Jersey.

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

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	$255	❑ I elect to Go Green	$230
❑ International	$270	❑ I elect to Go Green	$200

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

❑ 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	$255	❑ I elect to Go Green	$230
❑ International	$270	❑ I elect to Go Green	$200

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	$255	❑ I elect to Go Green	$230
❑ International	$270	❑ I elect to Go Green	$200

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	$255	❑ I elect to Go Green	$230
❑ International	$270	❑ I elect to Go Green	$200

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.

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A Bit of This, a Bit of That

Tony Wiersielis, CPL, CFDI, provides tidbits of advice about passage sets, door wedges and more.

In the June 2020 issue of *Keynotes*, I showed you my everyday key ring with some tamperproof light switch keys on it. When I had the issue in hand and looked at the picture, it occurred to me that there was another use for one of those keys.

I used to carry a handcuff key on my keyring, but I wasn't opening cuffs with it; I'll explain that in a minute. There was a small pin at the back of the bow of the key, similar to the one in *Figure 1*. This pin is used to push in a small button that locks each cuff in place once they are put onto someone's wrist. What this does is prevent the suspect from tightening the cuffs any further.

For the newbies or anyone unfamiliar with handcuffs, here's why the cop might do this: Not everybody goes quietly. There's always going to be people who resist arrest and make life miserable and dangerous for the police. One of the things they can do is deliberately tighten the cuffs on their wrists and then complain about it. Now the officer has to loosen the cuffs, only to find that the suspect tightens them again and again. Obviously, pushing the button stops this foolishness.

The reason I carried that key was to always have a readily available tool — the pin on the bow — to push in a knob or lever retainer. Here's why: Sometimes I'll do a survey for a job where I'm making a list of things to be repaired or replaced. In other words, a walk-through. If a door has a simple issue, such as a loose strike or faceplate screw that won't let the door close, I'll often use Loctite and tighten the screw when I find it. It only takes a minute, I won't have to do it when I come back for the rest of the work, and the customer appreciates it.

The cuff key comes in handy if I find knobs with the cylinder upside-down or some sort of timing issue. I usually point this out to customers, telling them why it should be right side up, and flip it over for them. They appreciate it and learn something. And, in a subtle way, they learn the difference between whoever installed it and me, the locksmith who fixed it.

What I realized recently was the light switch key has a longer pin and is easier to use compared to the cuff key. If you find one of those retainers that feels like it's stuck and needs more pressure, the cuff key is too small to give you a good grip and can be a little painful. Since a key ring goes through the center of the switch key, you can use that for a bit more leverage if you need it. The bonus is that I now have one tool to do the job of two. The cuff key is now stored on my truck.

Figure 1. A handcuff key can be used to push in a knob or lever retainer.


Figure 2


Figure 3

Figures 2 and 3. These outside and inside knobs of a Kwikset privacy came from a bathroom door.

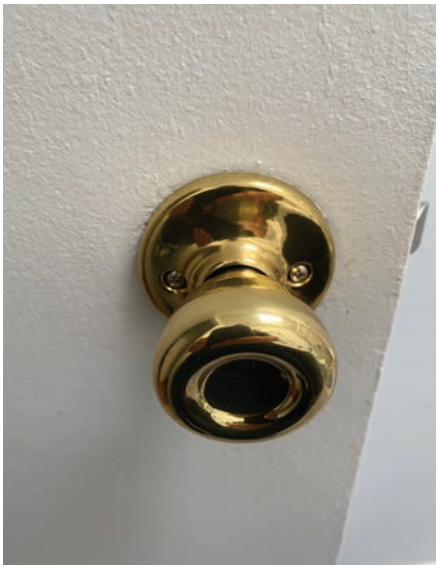

Figure 4. The author installed the outside knob with the screws on the outside of the door.

A Passage Set Tip

Figures 2 and *3* show the outside and inside knobs of a Kwikset privacy lock that came off of my elderly in-laws' bathroom door. Recently, one of them turned the thumb-turn and pulled the door shut from the outside, locking them both out. I came over and unlocked it, but the family consensus was that even if I provided an emergency key, it was unlikely they'd remember where it was.

I installed a Kwikset passage set to replace the old privacy lock. *Figure 4* shows the outside knob. Note that I installed it with the screws on the outside of the door. Years ago, I was taught to install passage sets this way for several reasons. First, if the latch fails, jams or disengages, the lock can be easily unscrewed from the outside without damage. Second, being a passage set, there's no security involved, so it doesn't matter where the screws are.

Take another look at the outside of the privacy lock in *Figure 2* and notice where the screws are. Obviously, it was designed that way, possibly for the reason I mentioned above. If you think that this looks tacky, realize that on most of the better-quality cylindrical knobs and levers, the screws are covered by a rosette and aren't visible at all.

Vintage Eagle Lock

Figures 5–7 show the body and latch view of an old Eagle rim latch, followed by a

Figure 5


Figure 6


Figure 7

Figures 5-7. These images show the body and latch view of an old Eagle rim latch, followed by a shot of the hinge side of the lock.

Figure 8. The red circle indicates one of the two hooks built into the backplate.

Figure 9. This view shows the two threaded holes that the flat-head screws above and below the latch screw into to complete the installation.

shot of the hinge side of the lock. The story here is that the building was being emptied and renovated. Someone had taped the latch with blue painters tape so it wouldn't extend, and the door had accidentally locked when the tape failed. I had to open it.

Notice that you don't see any screws holding the lock onto the door. You do see one screw above the latch. There's another below it, under the tape. But what holds the other end of lock tight to the door? *Figure 8* shows the backplate of the lock screwed into the door with three screws. The red circle is showing you one of the two hooks built into the backplate.

To install the lock, it's placed over the plate and slides slightly toward the hinge side of it, causing it to be trapped under the two hooks and held fast to the door. *Figure 9* is a different view, showing the two threaded holes that the flathead screws above and below the latch screw into to complete the installation.

Go back to *Figure 6* and you'll notice two curious things about this particular setup. First, note which way the latch is facing. Normally a rim lock is installed on the inside of an in-swinging door with the latch projecting past the edge of the door with the bevel of the latch facing the outside of the room. This one is installed on the inside of an out-swinging door; the

Figure 10. This photo shows a nifty way of making sure a door wedge stays in place.

Figure 11. The author acquired this old custom mortise lock knob from a customer.

Figures 12 and 13. An old unit lock and its prep are shown.


Figure 14


Figure 15


Figure 16

Figures 14-16. Each cut took about a minute to finish with an oscillating saw.

latch is reversed and doesn't project past the door edge.

Because of this, we see the second curious thing. The arrow is pointing to a shallow mortise on the door under the latch. This was done so the strike could fit behind the latch when the door is closed. I didn't think to take a shot of the strike, unfortunately. You don't see these locks very much any more.

Door Wedge Genius and the Knob

Figure 10 shows a nifty way of making sure a door wedge stays in place. Someone stapled the hook side of some Velcro to the bottom of the wedge, which in turn, grabbed onto the carpet. Even if you kicked it, that sucker wouldn't move. The only way to move it was to bend down and pick it up. Of course, this wasn't a shag carpet — it was the kind of low-cut easy-to-clean stuff you usually see in schools and other institutions.

Figure 11 is a very old custom mortise lock knob. The letters "JJ" stand for *Jersey Journal*, which is the local newspaper in Jersey City. The building was built around 1911, and this was an original lock. I used to do a lot of work for them back in the late 1980s. When I replaced the lock this was part of, I asked the maintenance guy what he was going to do with it. He was throwing it out, so I asked if I could have it, and he said yes.

Over the years, I've collected a number of interesting items like this. I've actually met a guy who used to make coat racks by mounting three or four doorknobs on a nicely finished

Figure 17. The cut was made with a reciprocating saw.

Figure 18. The wrap-around plate is shown.

piece of wood. He lived in Hoboken, NJ, which is loaded with old, renovated brownstones so he had good supply of them. For the newbies, if you like this kind of stuff and think you might want to collect it, there's an important thing to consider: Whatever you take off a customer's door belongs to the customer, not you. Do as I did and ask if you can take with you. Most of the time, they'll say yes.

A tip regarding old clear glass doorknobs: If you run into one of these and the glass has a noticeable purple hue to it, these are highly prized by collectors. The knob changes color due to spending a lot of time in the sun, which causes a chemical reaction. It takes years for that to happen. I had one on a house we were renovating, and an antique dealer paid me 20 bucks for it. Should've kept it.

Unit Lock Retrofit

Figures 12 and *13* are an old unit lock and its prep. We were doing a very large retrofit using wrap-around plates and BEST cylindrical locks. The pocket for the latch on the wrap-around has to be mortised in, as we all know. The issue was that — because of the offset in a unit lock strike — the pocket didn't fit directly in the center of the old prep; we had to remove some wood above and below it for the plate to fit and line up with the old strike.

To understand what I mean by "offset," look at *Figure 12* again and notice the latch is not centered in the lock. The same goes for the strike, which is handed, meaning you can't flip them over because the hole is not centered.

Figures 14-16 show how this was done using one of those oscillating saws. This took about a minute to finish each cut. *Figure 17* shows the cut being made with a reciprocating saw in about the same amount of time, and *Figure 18* shows the wrap-around plate. Note that these were not fire doors.

Tony Wiersielis, CPL, CFDI, has more than 30 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.

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LockPicks.Com By BROCKHAGE
Phone: 408-437-0505
Fax: 408-516-0505
www.lockpicks.com

Locksmith.CZ
Phone: 420-604-226550
www.locksmith.cz

Lucky Line Products, Inc.
Phone: 858-549-6699
Fax: 858-549-0949
www.luckyline.com

MARKS, USA
Phone: 516-225-5400
Fax: 516-225-6136
www.marksusa.com

Master Lock Company LLC
Phone: 800-558-5528
Fax: 414-444-0322
www.masterlock.com

Medeco Security Locks
Phone: 540-380-5000
Fax: 540-380-1768
www.medeco.com

National Auto Lock Service Inc.
Phone: 650-875-0125
Fax: 650-875-0123
www.laserkey.com

Oasis Scientific, inc.
Phone: 864-469-0919
www.oasisscientific.com

OBDStar Techology Company, Ltd.
Phone: 86-755-86707161
www.obdstar.com

Olympus Lock Inc.
Phone: 206-362-3290
Fax: 206-362-3569
www.olympus-lock.com

Pacific Lock Company
Phone: 888-562-5565
Fax: 661-294-3097
www.paclock.com

PDQ Manufacturing
Phone: 717-656-5355
Fax: 717-656-6892
www.pdqlocks.com

Philadelphia Hardware Group
Phone: 858-642-0450
Fax: 858-642-0454
philihardware.com

Premier Lock
Phone: 908-964-3427
Fax: 877-600-4747
www.griptighttools.com

RemoteLock Pro
Phone: 877-254-5625
www.remotelockpro.com

Sargent and Greenleaf, Inc.
Phone: 859-885-9411
Fax: 859-885-3063
www.sargentandgreenleaf.com

SECO-LARM USA INC.
Phone: 949-261-2999
Fax: 949-261-7326
www.seco-larm.com

SecuRam Systems, Inc.
Phone: 805-988-8088
www.securamsys.com

Secure- T- Agency (STA)
Phone: 514-963-3701
Fax: 514-447-1024
www.secure-t.ca

Securitech Group Inc.
Phone: 718-392-9000
Fax: 718-392-8944
www.securitech.com

Security Door Controls
Phone: 805-494-0622
Fax: 866-611-4784
www.sdcsecurity.com

Select Hinges
Phone: 269-910-1988
Fax: 269-323-3815
www.selecthinges.com

Stanley Security Solutions Inc.
Phone: 317-572-1934
Fax: 317-578-4909
www.stanleysecuritysolutions.com

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

The Diagnostic Box
Phone: 407-375-0333
www.thediagnosticbox.com

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

WFE Technology Corp - WAFERLOCK
Phone: 866-422-300362
www.waferlock.com

Xhorse USA, Inc.
Phone: 407-608-4288
www.xhorse.com

SERVICE ORGANIZATIONS

A-Rein, LLC
Phone: 702-545-5605
omgate.a-rein.com

Academy Locksmiths, Inc.
Phone: 714-701-1300
Fax: 714-701-1325
www.academylocksmiths.com

ASSA Technical Services Inc.
Phone: 724-969-2595
www.assatechnicalservicesinc.com

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

Instafob - Key Fob Copy Solutions
Phone: 619-552-2211
www.instafob.com

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

SearchKings
Phone: 888-335-4647
www.searchkings.com

Westlake Lab Works
Phone: 952-745-4105
Fax: 952-475-3579

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

FOR SALE

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IN SEARCH OF

Looking for an ad that appeared in the Locksmith Ledger circa late 1940s-1956 for a Best model B spring powered bell exit alarm or a Detex equivalent. Ad stated "now you can legally lock fire doors!" Need it for article I'm writing.

I'm also looking for Locksmith Ledgers from 1949-1956 and 45-46. Preferably full years of each. Call or email Tony at aew59@juno.com or 201-965-7146 <11/20>

Classified Advertising Policy

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

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

AD INDEX

Advertiser	Ad Location	Website	Phone Number
ASSA-Ruko/Technical Services	page 35	www.assatechnicalservicesinc.com	(724) 969-2595
Autel	page 1	www.autel.com	(855) 288-3587
Big Red	page 35	www.bigredsafelocks.com	(877) 423-8073
Bullseye S.D. Locks	page 35	www.bullseyesdlocks.com	(800) 364-4899
ClearStar Security Network	page 59	www.clearstar.com	(360) 379-2494
Framon	page 25	www.framon.com	(989) 354-5623
IDN	page 9	www.idn-inc.com	
Jet Hardware Mfg. Co.	page 7, back cover	www.jetkeys.com	(718) 257-9600
KABA ILCO	inside back cover	www.adusa.us/smartpro	
Locinox	page 41	www.locinoxusa.com	(877) LOCINOX
Lockmasters	pages 12-13	www.lockmasters.com	(866) 574-8724
ScopePlus Labs	page 35	www.scopelab.us	(386) 427-2462
Security Door Controls	page 29	www.sdcsecurity.com	(800) 413-8783
Security Lock Distributors	inside front cover	www.seclock.com	(800) 847-5625
Southern Lock & Supply	page 39	www.southernlock.com	
Stone and Berg	page 55	stoneandberg.com	(508) 753-3551
Turn 10 Wholesale	page 3	www.turnten.com	(800) 848-9790
UHS Hardware	page 19	www.uhs-hardware.com	(954) 317-0997

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