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

October 2023

SECURING YOUR SUCCESS

EMERGENCE TO CONTROL OF CONTROL O

Mechanical Room Security

A look at one institution's mechanical room policy

Some common lockouts and how one professional handles them

> What a Key Compliance Manager Does

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Framon's Blue Dog Keys division is now featuring Bauer RV precut key sets. These sets come in handy for locksmiths working on trailers with lost keys. These sets include all of the keys in each series listed below. The two Bauer sets are as follows:

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New Global Link Precut / Master Set

Framon's Blue Dog Keys division is now stocking the Global Link complete precut key set. This set includes one of each key in the G301-G390 as well as a Global Link change (BD986), master (BD985), and compartment key (BD1016). In addition, the set also includes several other compartment keys normally found on Global Link affiliated campers & RV's. Included are CH751 (BD467M), R001 (BD741M) and CK330. **Part #BDGLSET**

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Features

Change Is Good

Steve B. Fryman CRL, CAI, CISM, AFDI, shares what he does in his role as key compliance manager.

Emergency Lockouts in Institutions

Sal Dulcamaro reveals the common lockouts he faced and how he handled them.

Mechanics of Mechanical Room Security

Take a look at one institutional locksmith's mechanical room policy.

Making Vintage Work

Rick Karas, RL, CFDI, AF DI, blends old with new during a lock installation on Geneva metal kitchen cabinets.



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Mission Statement: The mission of the ALOA Security Professionals Association, Inc., as dedicated members of the security industry, is to ensure professional excellence and ethics; create a public demand for professional locksmith services; represent and speak for the lock-smith 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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Consider Institutional Locksmithing Work

T SEEMS LIKE TIME HAS FLOWN. TWO YEARS AGO, I BECAME YOUR PRESIdent, and I have had a *great* time meeting everyone. I am now starting my next and final two years and still enjoy it.

The IAAL Auto Lock Expo is now behind us. If you missed this first-time all-auto convention, you missed a really good time. With education and food on the show floor, it was unlike any ALOA convention you have ever attended. Keep an eye out for the next one. And, while you're at it, save the dates for the 2024 SAF-ETECH and ALOA conventions. Read the Main Event column for more information.

Institutional Locksmithing as a Speciality

This issue is on institutional locksmithing. Although the big institutions have their own on-staff locksmiths, there are a *lot* of small institutions that need locksmiths but cannot afford a full-time one. These include hospitals, schools and government bodies. This is a great opportunity for the independent locksmith. However, it takes special training to be able to service these customers properly. You need to understand codes and ADA requirements and be well versed in the hardware they use. Also, be sure to have sufficient insurance to cover yourself. Nothing is worse than being caught in a lawsuit with improper insurance.

As far as training goes, look to see what types of hardware they have. Then, you can take ALOA classes at the convention and/or manufacturers' classes when they are offered. Just remember that, unlike the big institutions (who will usually try to have one brand of hardware), these smaller institutions usually have whatever the architects put down in their specifications. This means with three or four buildings, you may have three or four different brands of hardware. This is a very profitable side of locksmithing and well worth going after.

I hope to see you all at Yankee this month.

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



"This is a very profitable side of locksmithing and well worth going after."

5

A Great Year for Conventions

LOA SPAI HAS HAD A wonderful year of events. After a few challenging years for in-person events, we were back in full swing with the SAFETECH and ALOA conventions. And – even better — we were able to add a third entirely new convention for this year: IAAL's Auto Lock Expo.

We were excited to be able to get our first automotive-only convention off the ground this year. After forming the International Association of Automotive Locksmiths (IAAL) last year, we knew that we'd want to establish a convention presence if we could. With the hard work of the IAAL board and ALOA staff, we made this a reality.

The Auto Lock Expo was held in Kansas City, MO, September 14-16, and everyone who attended had a great time. It was fantastic to be able to hold an event where automotive specialists and those who want to get more into that segment of work — could come together for hands-on classes and see the latest in automotive products and services. Thank you so much to all our sponsors, instructors and attendees. This was a wonderful first-year event, and we hope to be able to build up on this convention's success next year. In the November issue of *Keynotes*, look for a full recap of the convention.

ALOA 2023

As you likely saw in the September issue of *Keynotes*, ALOA 2023 in Orlando was

also a great success. We had good attendance in classes and at the Security Expo, and the newly renovated Hilton Orlando was a wonderful venue. We had some new classes and instructors, and several sold out. Thank you to everyone who helped make this event a success.

Save the date now for the 2024 ALOA Convention & Security Expo! We'll be back at the South Point Hotel & Casino in Las Vegas July 22-28, 2024. This is always a great location for us, and we hope to see you there.

SAFETECH 2023

SAFETECH is always a special event each year, no matter the location. It provides a close-knit feeling, whether you've been attending for years or it's your first time there. This year's SAFETECH in Reno, NV, was no exception. We had a great set of classes and instructors, and everyone had a great time meeting new people and connecting with old friends.

Save the date now for the 2024 SAFETECH Convention in Tulsa, OK — we will be there April 22-27, 2024. This will be a new location and venue for us, right in the middle of all the fun in downtown. It's a walkable area with a lot to do and many places to eat and be entertained. Look for more information in the coming months on SAVTA. org and ALOA.org.

Membership Renewal

As it's October, you'll soon be receiving your membership renewal information.



ALOA SPAI membership not only provides you with so many benefits — from discounts on education and books to free bonding and insurance access but it's so much more than that. It connects you to the rest of the industry, providing camaraderie, mentorship opportunities and a chance to provide input to shape the industry. We appreciate your support so much, and we'd love to have each of you back as members next year — and for you to become more involved.

So you don't lose access to any of your member benefits, be sure to renew by December 31. The easiest way to renew is online at www.aloamembers.org after you log in. If you need any assistance, please do not hesitate to contact membership@ aloa.org.

Thank you so much for your continued support, and have a wonderful fall season!

Mary Q. May

Mary A. May Executive Director mary@aloa.org



HYATT REGENCY TULSA

CLASSES APRIL 22-26, 2024 **TRADE SHOW APRIL 27, 2024**

SAVE THE DATE!

Information coming soon on SAVTA.org

ASSA ABLOY Acquires Lawrence Hardware and Gallery Specialty in Canada

SSA ABLOY HAS ACQUIRED LAWRENCE HARDWARE and Gallery Specialty, providers of commercial hinges, locksets, exit devices and door hardware accessories in Canada.

"Lawrence and Gallery are well-known, respected brands in Canada and I'm excited for them to become part of ASSA ABLOY," says Lucas Boselli, executive vice president of ASSA ABLOY and Head of the Americas Division. "This acquisition supports our growth ambitions and commitment to the Canadian market by further strengthening our core business and expanding our product portfolio."

Lawrence Hardware was founded in 1876 and Gallery Specialty in 1989, together employing some 50 employees. The main office and factory are in Toronto, Canada.

NEWS BRIEFS

GPLA will hold a Basic Mechanical Combination safe Lock Servicing Class October 14 at GPLA headquarters from 8 a.m. to 5 p.m. Taught by Clifford Shafer, CPS, CML, the hands-on entry-level course will instruct students in the proper methods of installation, operations, service and troubleshooting of mechanical combination safe locks. Register on GPLA.org.

Southern Lock & Supply will hold a training on HA9 Installation at the company's Largo, FL, branch October 18 at 5:30 p.m. The three-hour course will cover features, installation, advanced programming and optional components. For more information, contact Sarah Duncan at sduncan@southernlock.com.

Allegion has appointed Susan (Sue) L. Main, senior vice president and chief financial officer (CFO) of Teledyne Technologies Incorporated, to the company's board of directors. With Main's appointment, Allegion's 10-member board of directors has 60% diversity across gender, racial and ethnic representation. Main will be a member of the board's Audit and Finance Committee, Compensation and Human Capital Committee as well as its Corporate Governance and Nominating Committee. For more on Allegion's corporate governance, refer to www.allegion.com/ESG.

PRODUCT BRIEFS

The Brass Knuckle® Read (BKREAD-6010) provides lightweight bifocal eye protection in five diopter strengths: 1.0, 1.5, 2.0, 2.5 and 3.0, eliminating the need for over-the-glasses protective eyewear. A polycarbonate frame provides extra side protection, and the clear lenses are ANSI-rated hard-coated polycarbonate with BK-Anti-FOG that lasts two minutes, 15 times longer than European EN 166/168. It is permanently bonded to the lens, will not wear off or wash off and retains its anti-scratch, anti-static, and UV protection properties. For more information, visit www.brassknuckleprotections.com.



IN MEMORIAM

ALOA member **Phillip Eugene Mossey** of Baker's Lock & Key in Whittier, California, passed July 15. Memories and expressions of sympathy may be shared at www.rosehills.com for the Mossey family.

John I. Shandy, CML, of Boulder Security Center Inc. in Longmont, CO, passed away September 11. He was a Life Member and had joined ALOA in 1967. In 1963, John and his wife Madeline started John's Lock Shop in Boulder, which later became Boulder Security Center. They

also opened The Lockshop of Cheyenne and Flatirons Wholesale Supply. John was active in the Rocky Mountain Locksmith Association (RMLA) and ALOA, serving in a variety of officer roles including president of RMLA and board member and education coordinator for ALOA.



LTI & O Security Acquire NL Lock

TI & Q SECURITY HAVE ANNOUNCED the acquisition of NL Lock, brainchild of inventor and entrepreneur Klaus "Nick" Gartner.

"I look forward to carrying on the Miller family tradition of innovation in and service to the security industry," said Clay Miller, CEO of LTI & Q Security. "Nick and I first worked together at Sargent & Greenleaf in the early 1970s and have remained close friends and sometimes competitors — in the ensuing decades. Nick has always had a knack for seemingly simple yet elegant product design. Fewer parts mean fewer problems, as the NL Lock product line aptly demonstrates."

Following the sale of LA GARD Inc., Gartner founded NL Lock in 2003 with a line of costeffective, easy-to-use service electronic locks. Says Gartner, "I have always strived to produce highquality security locks that will still be in service decades from now. Clay and his team have the knowledge and ability to continue my legacy."

Concurrent with the acquisition, LP Locks will merge with NL Lock. Susan Gartner Papa will continue to represent the brand, as she has since 2007.

CLK Supplies Announces Giveaway

LK SUPPLIES HAS ANNOUNCED ITS "#LockBoss Season 2.2" giveaway, which will include a grand prize of \$2,000 in store credit plus weekly prizes. To enter, comment on CLK Supplies' videos on YouTube (@clksupplies) and include the hashtag #lockboss. Winners will be chosen every Tuesday, and the grand prize winner will be announced December 29 at 4 p.m. Pacific Standard time.

The company also has "#Lockboss" merchandise, including an air freshener, lock boss bumper sticker, water bottle and beanie. For more information, visit www.CLKsupplies.com.





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

OCTOBER 2023

October 2-7 ALOA Locksmithing Fundamentals ALOA Training Center Dallas, TX education@aloa.org or (800) 532-2562, ext. 101

October 17-18 AFDI Webinar education@aloa.org or (800) 532-2562, ext. 101

October 20-22

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

October 20

IDN-Chicago Education & Trade Show Naperville, IL www.idn-inc.com

October 25-29

Yankee Security Convention The MassMutual Center Springfield, MA yankeesecurity.org

October 25-28

Texas Locksmiths Association 2023 Convention Courtyard Marriott, Pflugerville

Pflugerville (Austin), TX www.texaslocksmithsassociation. org/convention

DECEMBER 2023

December 4-9

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

APRIL 2024

SAFETECH 2024 Tulsa, OK www.savta.org



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ALOA CERTIFICATIONS

Looking Ahead to 2024 Conventions

Save the dates now!

ONVENTIONS MAY BE OVER FOR THIS year, but planning for 2024 conventions is in full swing! Save the dates now for SAFETECH 2024 and ALOA 2024, and plan to be at both for a week of learning and connection.

SAFETECH 2024

SAFETECH 2024 will be in Tulsa, OK — and the location is fantastic! You may not think of Tulsa as a happening place, but it truly is. The architecture and culture of the city are fun and inviting, and the Hyatt Regency Tulsa is right in the middle of everything.

The start of the next successful chapter of your career is at SAFETECH 2024. Join us April 22-27, 2024, for a valuable week of hands-on safe and vault education, the latest products and tools, networking



SAFETECH 2024 will be in the heart of downtown Tulsa, OK - a vibrant, walkable area.

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opportunities and more. Our instructors are second to none and will help you get on the path to working in the safe and vault sector of the industry — or getting more jobs if you already dabble in safe work.

We'll have more information on classes in the coming months as they get finalized. Keep an eye on SAVTA.org for more information, and we'll also publish information in the next few issues of *Keynotes*. But, for now, go ahead and book your room! They always sell out, so now's the time to get your room secured with the discounted rate. To make a reservation, call (888) 591-1234 or (918) 582-9000 and mentioning "SAVTA" or "SAFETECH."



ALOA 2024

We had a wonderful convention in Orlando in August and hope you had a great time there. If you couldn't attend, make plans now to go next year! We're returning to the South Point Hotel & Casino in Las Vegas July 22-28, 2024, where you can transform your future in whatever direction you want to go! Plug into the latest technology, reboot your professional network and learn some new skills. The 2024 ALOA Convention & Security Expo can provide the site map to create your own destiny.



Booths and Sponsorships

Both SAFETECH 2024 and ALOA 2024 are open for booth space booking and sponsorship applications! Many have already reserved booths for next year, so don't wait — the prime locations will fill.

Contact Kelly Parker at kelly@aloa.org for more information, and she can also send you exhibitor and sponsorship opportunities. Custom packages are available, and you have the chance to sponsor everything from signage and lanyards and bags to events, refreshment breaks and more. You'll also receive bonus exposure in *Keynotes* and the on-site program for attendees.

Look for more convention information soon on ALOA.org and in Keynotes! @

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Cost-Effective Key Learning

HERE ARE DIFFERENT TYPES OF automotive key and immobilizer programming tablets that align with the sliding scale of security systems adopted by automakers. European vehicles have the most advanced security systems and pose the biggest challenge to locksmiths and vehicle security professionals. Aftermarket automotive key and immobilizer tool developers have made a concerted effort to remove the struggle from complicated tasks with automated functions and step-by-step instructions. Yet, newbies might want to start with one of the less complex, less expensive key-cloning tools.

Cloned keys do not need to be learned to the immobilizer, as the system does not realize it's a copy and not a new key. These tools are easy to use, but their potential to increase profits for your business is extraordinary, as some of these tools also offer key generation by which smart keys can be created for a wide range of vehicles. These keys are then programmed to the vehicle immobilizer.

With the introduction of universal programmable smart keys, such as the Autel MaxiIM IKEY, the locksmith can create a new, multi-functional replacement smart key for a vast number of vehicle brands, including Honda, Nissan, General Motors, Chrysler and specific BMW, Audi/ VW and Volvo vehicles.

ALITEL MAXIM UNDER PROGRAMMABLE, OF-QUALITY SMART KEYS





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Getting Out of Your Comfort Zone

By ALOA SPAI Director of Education William M. Lynk, CML, CPS, ICML, M.Ed.

> UTSIDE OF AN ADVENTUROUS SPIRIT, MOST PEOPLE TEND TO STAY INside of what we call our "comfort zone" when it comes to doing or trying new things. I suppose that's because what we know well is familiar, easy and safe. But when it comes to education, we often need to creep outside those fortified walls of the familiar and venture into the unknown.

Specialties

Locksmiths often develop areas of expertise that are specific areas of interest. They are specialized areas of locksmithing that require additional knowledge, skills and time "in the trenches." It may also involve advanced study, classes, research, job involvement and years of plain old work in that field. We usually become better at what we do often, especially if it is an area we enjoy.

Nothing is wrong with this. As a matter of fact, it is the foundation of what we call "experts" in the field. We look up to these locksmiths as not only experts, but also as mentors. But there is also something to be said about experiencing what a new field of endeavor has to offer. In the locksmithing arena, it not only means the areas you enjoy, but also everything else. You may specialize in safe work, but what about electronics, automotive, mechanical locks, access control, etc.? Are you at least proficient in other areas?

Expanding

In the education world, there is a phrase that is known as "breadth and depth of knowledge." It simply means that, as a well-rounded person, one should be exposed to a wide variety of topics as well as take a meaningful dive into those content areas. Putting that in locksmith terms, it means venturing into specialty areas other than your own! That forces you out of your comfort zone. You may think, "Forget it. I only do safe work, so why do I need training or experience in other areas?"

The Unknown

We often go through life thinking we know what we want, what we like and what we will be doing. It sure is nice to plan, but we really never know for sure what life will throw at us. For example, if you are an institutional locksmith at a college and work only with the complete Sargent line of hardware and locks, you might think there is no need to take a class in Corbin Russwin, Medeco or other locking systems. Thus, you pass on taking ALOA classes in your location, even though they will foster a better understanding of other locking systems, safe work and access control opportunities. Obviously, this is not a good way to achieve "breadth and depth" as a locksmith.

What if your institution introduces Medeco in several buildings, and it's part of your job to be able to immediately service them? Maybe now you will be required to service a number of new safes on campus. And there is always the possibility of transferring to another position at another college with better pay and benefits. But what if that college is filled with Peaks Preferred and Schlage products? Expanding your skills and knowledge is always something that will benefit you not only now, but also down the road ... a path that is unknown to almost all of us.

Pushing the Boundaries

Taking classes that are "new ground" to you is not always an easy decision, but it should be. Taking a webinar or a live class at a convention or through a local ACE class is one way to push a little outside of your comfort zone. Often, we find that a new experience can be a refreshing change — and hopefully a profitable one down the road.

Staying only within your educational comfort zone can certainly be safe, "Taking classes that are 'new ground' to you is not always an easy decision, but it should be."

but is it advancing you as a person? I recall this classic saying about college professors: "A professor is someone who learns more and more about less and less until he knows everything about nothing." Expertise has its rewards, but so does a broad base of knowledge and understanding.

So, go ahead and throw caution to the

wind by taking a class you never thought you would. Be brave and jump right in ... the water's fine. 參



ALOA SPAI Director of Education William M. Lynk, CML, CPS, ICML, CMIL, CAI, M.Ed., has been a locksmith since 1975 and is the owner of www.ICLS-

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





Update on AIL Happenings

By John Truempy, ICML, CRL, CMIL, IFDI

s I do each year, I am reporting to the membership of ALOA Institutional Locksmiths (AIL) on the state of the division. I am glad to report the division is doing very well. The division — and ALOA as a whole — had a good convention in Orlando, and it was a true pleasure to talk to so many of my division members.

Our membership numbers have remained fairly steady and have even gone up because of our Fire Door Inspection Program. We are also still enjoying the fact that our members were considered essential workers through the pandemic. Other than the new automotive division (IAAL), it would have been close to the highest membership increase across all the ALOA divisions.

On the Horizon

Our division continued to provide new electives for the Institutional Proficiency Registration Program (IPRP), and our Life Safety and Fire Door Inspector (LSFDI) certification numbers continued to grow. As already stated, it did increase our membership numbers a little.

With the passing of Jim Hancock, developing even more IPRP tests has been on hold. But with the new education directors now on board, we will get back on track soon.

Reports from our members regarding a lack of qualified applicants and job vacan-

cies have grown louder this year, and the division is still looking at ways to help. We plan to do an even larger survey this year, so if you get one, please take the time to fill it out and return it.

As always, I am looking for more things the division can do to help our members — and, in extension, their institutions. If you have an idea or a need you think we can meet, reach out and let me know.

AIL Influential Leader Award

Last, I will end on one of *my* personal highlights from this past year. The one and only thing that is solely up to the president of a division is picking the person who receives the division's award. Our award is called the ALOA Institutional Locksmiths Influential Leader (AIL for short). It is given to a person who has supported the division — and, in this case, ALOA as a whole.

This year's recipient was Wendy Angel, who you all know as the editor of Keynotes. But she is so much more, and I have never heard her say no to any request for the division. She is officially a contractor but more like a staff member - or, worse, almost like a member who cares about ALOA and especially AIL. She helps with our surveys and makes sure the division is represented well in photos and the publications. She hounds me when she needs a report or material. I think I am only a week past the deadline on this one. One of the most fun things was telling her I needed her to take the photos of the award ceremony and giving her an hour range for when it would happen. She had no clue it was her and was

"As always, I am looking for more things the division can do to help our members — and, in extension, their institutions."

there the whole time while I ran on about division stuff. Giving her the award then means no good-quality photos ... sorry.

Thank you, Wendy. This award is so well deserved, and you're now an honorary institutional locksmith. I will yield the rest of my report to her acceptance speech (Four pages should do). ∅



John Truempy, ICML, CRL, CMIL, IFDI, is employed at the University of Pennsylvania, where he's been a locksmith for more than 22 years. Prior to that, he spent a few

years as a commercial locksmith and worked for the State of New Jersey at Trenton State Psychiatric Hospital. As the first president of ALOA Institutional Locksmiths (AIL), the ALOA SPAI division, he has over 16 years of association management experience. He has written many books focusing on both practical and esoteric applications for master key systems, including Advanced Master Keying Skills and Master Key System Specification, Application & Management. He also teaches both fundamental and advanced locksmith subjects.



engineered the UniFLEX[™] 45 and 55 series – the first electric strikes with interchangeable faceplates and field reversibility for failsafe or failsecure operation. The interchangeable design of these strikes allows SDC to also provide multi-application strike kits that include one electric strike and three faceplates to meet common applications, making them easy to stock and maintain in inventory. Today, our strikes integrate with a broad range of mechanical locksets, devices, door and frame styles and budgets. Since 1972 SDC products have been designed, engineered and built in America to provide guality products that are readily available.



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Membership Has Its Benefits

HE IAIL BOARD HAS BEEN WORKING RELENTLESSLY ON MEMBER benefits this year. We aim to have so many good things available to members that membership (and renewal) becomes a no-brainer investment in your career, education, revenue, certifications, professionalism, prestige, client list and general life/work satisfaction! Toward that end, we have been working on a revised edition of the CFL Manual. In case you're unaware, this is the primary reference manual for our craft. Originated in 2001 by Jim Glazier and Don Shiles, edited by Tom Demont, it has not been

updated or revised since 2016. So, this will be a major revision with 80-85% new material. We are even hoping to include many new photographs, especially in color (current manual is black-and-white only).

A complete draft for peer review is targeted for the end of this year, with republication expected sometime in Q1 2024. We really have high expectations that this will be a true compendium of knowledge and a leading reference manual in the field.

- Why should we consider this a member benefit?
- It is a tool for studying for your CFL credential.
- It will set the standards for the industry.
- It will be a reference manual for future investigations, reports and testimony (as well as friendly trivia wagers at the bar at convention).
- It will supplement the IAIL education curriculum.
- There will be an IAIL member-only cost for purchase (new!).
- It will be a living document with frequent updates to remain state-of-the-art. If you'd like to be on the editorial committee for the CFL Manual, drop me a note.
 We still need a few readers and contributors.

IAIL Webinars

The Forensic Friday webinar for August was from our own esteemed attorney, Barry Roberts, who gave some excellent pointers on *Expert Witness Best Practices*.

Scheduled for September 29 was a presentation on *Forensics Best Practices, Lab Setup, and Tool Mark Examples* by Gert & Hans Mejlshede. They provided us a unique perspective from Europe derived from their thriving insurance investigation business. Hans has taught forensics for decades and was one of the founding members of IAIL.

"We have been working a revised edition of the CFL Manual."

Together, Hans and Gert average several cases per month, and have a lot they can share with us. In October and November, we'll have a two-part series for you on hotel lock security and forensic investigation.

If you have an idea for a case study or research project you'd like to share, please let me know.

See you at Yankee. 🔗



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

Get Published!

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



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Membership Application

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PROFESSIONAL INFOR Please check the description th Locksmith Owner Electronic Security Institutional Other	MATION at best describes you (cho Automotive Security Pro Safes	eck all that apply) ofessional	 Employee Technician Mechanical Door Locks & Hardware Investigative 			
Are you licensed to perform Loo	ksmith/Access Control w	ork in your state? o Yes	s o No If Yes, License #			
Business License #		EIN #				
Any other license held by applic	ant (Contractors Lic., Lov	v Voltage)				
Any other states you do busines	s in and licenses held in t	those states				
List all phone numbers used by	your company/companies	s:				
Number of Employees	Group Store Front Busine	ess 🛛 Mobile Only				
How long have you worked in th	e locksmithing/security in	odustry?				
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Sponsor Name (Required)		ALOA Number	Years known			
Have you ever been a member o	of ALOA before? 🛛 Yes 🗆	No If Yes, when?	ID #, if known			
Are you a member of any local l	ocksmith association? \Box	Yes 🛛 No If Yes, name	of association:			
Give the names and phone num	bers of two industry-relat	ed references:				
Name	Company		Phone Number			
Name	Company		Phone Number			
IMPORTANT: Have you ever bee All convictions are reported to t A routine background check is performed	en convicted of a felony? he Advisory Committee fo on all new applicants, unless you	□ Yes □ No If yes, ple or review. live in a State in which passing	ase give details on a separate sheet. 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.

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 \$270 I elect to Go Green \$240 International \$280 □ I elect to Go Green \$210 International Association of Investigative Locksmiths Membership Must be an ALOA Member in order to join the IAIL. US and US Territories \$65 **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 \$270 I elect to Go Green \$240 International \$280 I elect to Go Green \$210 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 \$270 I elect to Go Green \$240 International \$280 □ I elect to Go Green \$210 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 \$270 I elect to Go Green \$240 International \$280 □ I elect to Go Green \$210 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

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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

Signature

Date Signed

Date

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\$70



Manipulation of Direct-Entry Locks

Richard Vigue explains his process to open these locks.

HIS ARTICLE USING A SENTRY 5310 SAFE DOOR IS for the newer safe techs and can also be a refresher for the more experienced safe tech. The 5310 is a 1980s vintage direct-entry door. I will show how to get it open via manipulation, so no holes are needed in the door.

A Sentry is designed as a fire-resistant door with no burglar protection. Do not use it for large sums of money, as most burglars can gain access in less than 10 minutes. This procedure can also be used on some import safes and some gun safes that are direct-entry. It also will work on antique safes that are direct-entry, such as the Halls and Cary. Mark Swetland of New York state has a great video on YouTube that shows how things are done. Search on YouTube for "Halls" and choose the John Wick Pick video. This will enhance your visualization of what happens inside. Also, there's a great book you can find on Amazon for about \$20 called *Manipulation 101*. It's very good reading material.

A Look at the Tools

Figure 9 shows the book and some of the tools. The flaring tool is good to attach to round or "T" handles on older units. The magnet (not too strong) is one from a hardware store, and an 8-32 screw has been installed. I also show a rubber band to apply constant pressure on the BCH. On older units, I use springs of different pressure because of the handle not moving and needing greater pressure.

Other manipulation tools are shown in *Figures 10-16. Figures 10 and 11* show a method of attaching to a plastic handle and forming a stiff wire as an indicator. Notice the calibrated magnetic indicator. *Figures 12-14* show a laser held onto a plastic handle with double-stick material. Notice how I have moved the indicator to get more amplification of handle change. *Figure 15* shows the roll of sticky tape (available from Amazon)



Figure 1. The front of the door has a 100-number dial.

that works well. Figure 16 shows another laser with magnetic mount as well as a magnet so I can attach a round laser to a metal handle. I would use the sticky tape and stick the round laser to the extra magnet.

A Look at the Safe

In *Figure 1*, we can see the front of the door, which has a 100-number dial and a handle used to retract the openingside bolt. This handle is commonly called a BCH, which stands for "bolt control handle." Also, note the serial number on the bottom right of door near the hinge. As a Sentry service person,







Figure 3. Note the 11 false gates and one real gate, as well as a narrow gate on the drive wheel opposite the real gate.



Figure 4. This side view shows wheel 1 and 2 and the drive wheel.

I would call into the company, and that number would return the combination. If no one had changed it from factory code, it would allow me to dial it open. *Figure 2* shows the back of door with the access panel to get to the main working components.

Now for the goodies in *Figure 3*. We can see two wheels and a driver wheel. Also note the 11 false gates and one real gate, as well as a narrow gate on the drive wheel opposite the real gate. Some may have only eight gates but will work the same as the 12 gates. You can see the correct gate and the fence ready to enter and retract the boltwork by using the BCH to move the cam. Notice the stationary bolts on hinge side to stop you from prying it open and the large opening-side bolt that retracts to open the door.

In *Figure 4*, I have taken a side view picture to show wheel 1 and 2 and the drive wheel. You may or may not notice that the wheels are not exactly the same diameter. The difference is small, but that will allow us to determine the number for the gates. *Figure 5* shows all wheels aligned and fence ready to drop in. See the indent on the wheel, which is called the fixed fly. It will come against a fixed fly on wheel 2, and as you keep turning, a fixed fly on wheel 2 will pick up wheel 1. Then you can start the combination process by setting wheel 1, then reverse direction and set wheel 2, then reverse again and set the drive wheel. *Figure 5* shows the fly and all wheels in proper position.



Figure 5. All wheels are aligned, and fence is ready to enter the wheel gates.



Figure 6. You can see the two flys on each wheel, plus a screw and cover that holds the dial in place.

In *Figure 6*, I have disassembled the wheel pack, and you can see the two flys on each wheel — one stands proud while the second is indented to meet with other wheel. You also see a screw and cover that holds the dial in place. To change the combination, all you need to do is remove the self-locking nut and move that metal piece — which is the fly for the drive wheel — to a different hole then reassemble. You really do not need to remove wheel 1 and 2 unless they need servicing.

Figure 7 shows where I used a utility knife to lift the round cover for access to the screw. If you want to remove the dial to



Figure 7. The author used a utility knife to lift the round cover for access to the screw.





Figure 8. This image provides a close-up view of real and false gates for this safe.



Figure 9. The author uses this book and the tools shown to aid in manipulation.



Figures 10 and 11. Here, you can see a method of attaching to a plastic handle and forming a stiff wire as an indicator.

drill under it, use a stiff putty knife to carefully lift the escutcheon that's usually held with double-stick tape. *Figure 8* gives a close-up of real and false gates for this safe. Others may differ a little, but this method of entry will work on most of them. Remember, we are looking for difference in wheel diameter that will allow the BCH to move deeper and give us an indication on our tool.

"The longer the indicator, the more the BCH movement is amplified."

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Figures 12-14. A laser is held onto a plastic handle with doublestick material.



Tool Talk

Now we will talk about tools. MBA USA has a manipulation kit for less than \$200, for those of us who like new tools. It is not needed to get the indications. All you need is a method to hold a pointer on the BCH and some blue tape as an indicator surface on which you can put a starting mark. The longer the indicator, the more the BCH movement is amplified. I have used a laser, and the beam was on a wall 4' away, and the indications were very pronounced. This was handy because wheels were difficult in indicating.

Getting Started

Now, to get started. You don't need the indicator for this part. Just push the BCH into the wheel pack and notice when your dial moves about three numbers when you are inside the false gate. Now, with 12 gates, if you divide 100 by 12, you get a little over an eight-number spread. Release pressure on the BCH and move about eight numbers, and reapply handle pressure. You should be able to move two or three numbers again. Keep going around the dial until you get a five-number spread, and now you have your last number. Find the center of the spread and write down your number. We will assume that we found a spread of 30 to 35. So, our drive wheel will be 33. Now you need to set up your indicating tool. Be sure it's sturdy and doesn't



Figure 15. This sticky tape from Amazon works well.

change when you touch it, as changes are usually very small.

Start by turning left at least three times, and stop at third wheel. Center it by turning the dial until it settles at 33. Now put the tape on the safe under the needle tip, and when it is settled, make a starting mark for the third wheel drop-in. Make sure the needle is close to but not touching the tape to get the most accurate measurements. Now, hold the handle out of the wheel pack and move right to 28, then return to drop-in and check the indicator. Then, lift the handle and turn right two numbers more to 26 and back to drop-in, and check indicator. Then go right back to 24, then back and check. Keep repeating until you have an indication, and continue 50 numbers till you have done a complete circle.





Figure 16. The magnetic mount and magnet are used to attach a round laser to a metal handle.

There are times you might get a second number, and then you would analyze and go from there. If you find two numbers, make one the second number and the other the third. Dial the combination, and if it does not work, reverse the numbers and try again. When you find that number going right, you need to use it in the same direction because the fixed fly will not set it at open when traveling left.

Let's say that number is 55. The opening sequence is L-R-L, and we found our second number traveling right, so we will make it the second number. So, we turn left three times and stop at 57, and one turn right past 57 and stop at 55, then left

"Remember, we are looking for difference in wheel diameter that will allow the BCH to move deeper and give us an indication on our tool." to 33, and try to open. Next, turn left to 59, and one turn right past 57 and stop at 55, then left to 33, and open. Next, turn left to 61 and right past 61 to 55, then left to 33, and open. Keep trying until you have made a complete revolution. If it does not open, 55 was not the second number, but the first.

Because of the fixed fly, making 55 the first number by going left necessitates adding 10 to 55. Now dial left three times to 65, then dial right past 65 and stop as 63, then left to 33, and open. Next, turn right past 63 to 61 and left to 33, and open. Continue right past 61 to 59 and back to 33 and open. This won't work well on newer safes with plastic wheels, as spacing is not very large. For these, I drill a ¹/₈" hole on the hinge side about 2¹/₄" back and use my 2.4 mm scopes. I have both straight and 30-degree and 70-degree. These serve me well on these newer-style safes. *(a)*



Richard Vigue started locksmithing in 1969 after someone stole his truck and set fire to it. He started with alarms from Radar Sentry in Michigan and took all the classes he could find for locks and safes. He semi-retired in 2005 but is still working and taking classes as well as acting as an adjunct

teacher at a local college.

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Change Is Good

Steve B. Fryman CRL, CAI, CISM, AFDI, shares what he does in his role as key compliance manager.



HANGE IS INEVITAble. Like it or not, seasons change. People change, and we all grow older every day. How do we

adapt to our daily work changes? I am convinced the more we accept change, the happier we will be. I have been through a lot of changes, like most of you. Worked in a family business, owned my own business and worked for two large institutions. Each iteration brought challenges, learning curves and, yes, rewards.

In every job, I have had good and dreadful things as part of the daily work experience, like most workers. I didn't always enjoy working with and for my father. Looking on the bright side, if I hadn't worked for my father, I would have never seen him, as he was always working. Spending time at work was often a double-edged sword, cutting deep both ways.

My dad was not easy to work for. After doing it for 10 years, I learned a lot about my work and myself. I would ask him how to do something, and he would say, "You are a locksmith; figure it out." So, I did. This taught me how to be self-reliant.

In the institutional world, I enjoyed working for a boss who thought he was pharaoh, demanding I make bricks without straw. (This is a Biblical reference ... get it?) Every work experience brought new knowledge and experience. I learned how to run a locksmith service business from my experience working in our family's business in Miami. I learned how to be a good supervisor from having a psycho despot of a supervisor who did not spare the whip. I knew this would *not* be my management style. Every job I have had prepared me for the next one.

My Current Position

I have grown to like my new position as key compliance manager. I had never heard of this kind of job title before and was not sure it was even a real job. This change in my career came about due to a blending of education and general division known as E&G and Student Services and Housing. The merger of the two divisions on campus is called "blending." Truthfully, with people not liking change, I believe some employees have felt as though they have been put in a blender.

On a positive note, I really like my new position. I am out of the drama of supervision — 12 years was enough. One of the employees I supervised is now the key shop supervisor, who oversees a combined group of workers. His shop was formed by combining two groups, blending E&G employees and Housing. He is doing an excellent job! I am glad to pass the baton on to the next generation. The new supervisor position description is more of a player-coach, working tickets alongside the employees he supervises. This is a new model.

I have not been on my tools for 13 years now. I cannot say that I have missed working from work orders. The earlier job description for key shop supervisor was more of an administrative type of job. We had more skilled workers at the time. I was always told we were overstaffed. Well, COVID and retirements fixed that problem. I did parts orders and delegated work done in the field. I would help in the front walk-in end of the shop with key fabrication and issuance from time to time. That was the old model before COVID and the blending. Now, with the scarcity of skilled workers, the new model has its place and is working well.

This leads me back to what I am doing to contribute to my institution supporting the Key Shop. I would like to share with you the official position description.

"I have grown to like my new position as key compliance manager. I had never heard of this kind of job title before and was not sure it was even a real job."

The table below is part of the position description from my working title as key compliance manager. This list of directives takes most of the burden of the day-to-day administrative responsibilities from the key shop supervi-

% Time Allocation	Essential Function	Description
25	8	Prepares keying plan and system specification for all campus projects. Reviews project documentation and completes inspections during construction to ensure that the appropriate systems and hardware are installed. When requested, provides construction contract services to support the construction team in project completion.
25	5	Manages the campus Key Manager program. Ensures that each department has a fully trained Key Manager. Writes and maintains the Key Manager Program document. Provides audit services to ensure that the Key Managers maintain compliance with the program. Additionally, conducts key audits on campus to ensure that the keying system in place matches details in the campus key management software. Documents variances and coordinates with the Key Shop Operations Supervisor to make the appropriate changes.
25	5	Primary contact with FSUPD to determine how to manage the risk associated with key loss or other key system related vulnerabilities. Assures that each time a key is reported to FSUPD, a completed security assessment form is created and signed by the Chief of Police regarding whether the University needs to rekey to maintain building security. Primary contact with departments that have lost keys and are responsible for any rekeying expense. The Key Compliance Manager will initiate a rekeying initiative and coordinate the receipt of appropriate department funding to make the correction.
15	8	Functions as the primary liaison between the campus card access team and the Key Shop for planning and projects. Responsible to ensure that the both the mechanical system and the card access systems for projects are compatible and will not result in a security failure.
10	8	Collaborates with Key Shop Operations Supervisor to review and develop campus standards for key, lock and access equipment and systems. Operates University vehicles as necessary and performs other related duties in support of the department.

sor — hence giving the new supervisor the time to perform in the new role as player-coach. The current supervisor still orders parts and controls key blank stocking levels.

I have enjoyed supporting the Key Shop in my new role. I have been able to drive new time-sensitive projects forward. Facilities have needed new key management software for years. We are on the verge of bringing a broken-down, antiquated key control system into the new millennium. Key consultations are one of my favorite responsibilities, shepherding the master key projects to completion. Helping educate the end user on how to use the master key system as a space management tool is extremely rewarding.

Also, our electronic key management box system, Traka, needed upgrading to the current generation of software, as our first-generation boxes are currently working on an old platform. If this was not done, we would lose support in May 2024. That would mean no new parts for old first-generation boxes. An interface with our work management system is necessary to integrate existing boxes to the new upgraded networked system.

It has been a joy to develop a new key manager program called Key Manager 101 as well (see the July/August issue of *Keynotes* for more information). For the most part, you could say I am really enjoying my new job as key compliance manager. I say change is good! @



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

Emergency Lockouts in Institutions

Sal Dulcamaro reveals the common lockouts he faced and how he handled them.

OMMERCIAL LOCKsmiths and institutional locksmiths both deal with lockout situations, but often in much different circumstances. Commercial locksmiths often deal with a mostly unexpected situation, as customers often supply wrong information, and the situation will be nothing like what you were told. Experienced locksmiths can adapt to the situation, whether through picking skills or more drastic measures for highsecurity locks such as drilling or other partially destructive opening techniques.

Commercial locksmiths' customer base can have numerous brands and models of locks that are used in a variety of locations and various pick resistance. Separately, the commercial locksmith usually requires identification to determine if the person has proper authorization. Physical environment is also a consideration; you'll typically drive to the lockout, and weather and traffic conditions can make the situation more difficult. In ideal conditions, you go out to an easy, predictable job, but it could be an unforeseen nightmare.

The institutional locksmith will sometimes go to a lockout blindly as well but will often be better prepared. At the hospital, I'll usually be contacted by somebody in authority who will identify the person and location of the lockout and authorize the entry. Beyond that, almost all the door locks are the same brand and operating on the building master key. In most cases, I'd walk over and use my master key, and rarely would I have to pick open the lock. In fact, sometimes it's even security personnel who uses a master key if it's after hours.

I was never required to deal with car lockouts but was asked to deal with locked-out desk drawers and cabinets, as security didn't usually have keys for them. I'd have a ring of master keys and a few commonly used key codes found on cabinets throughout the buildings. Most desks were Steelcase brand, and I had two series of Steelcase master keys that opened nearly all desk drawers in the hospital. After hours, security would sometimes tell the person to wait until the next day if it wasn't urgent. If a person locked car keys in a desk drawer and needed to go home, sometimes the maintenance staff would force open the drawer, and repairs would be dealt with later. When force was required for entry after hours, maintenance, rather than security, would usually take on the task.

That also applied to staff lockers. I had over a dozen Master Lock locker bypass keys that opened most lockers. If somebody locked their keys in a locker during working hours, I'd usually use a bypass key. After hours, somebody in maintenance would typically use (destructive) physical force.

As you can see, most institutional lockouts were resolved with a master key. It wasn't uncommon for staff members who authorized purchases of furniture or equipment to order nonstandard items that weren't compatible with our standard keys. Nonstandard hardware was sometimes an issue as well. Most door locks were BEST Grade 1 hardware. When new hardware was ordered, it was supposed to be BEST to be consistent with existing hardware, but there were outliers. One tower had Schlage hardware, but the locks were designed to accept BEST SFIC lock cylinders — so the BEST master keys for the hospital still worked.

The tricky part wasn't the door hardware, but desks, cabinets and other devices that used locks. Those locks wouldn't open with my assortment of master keys and commonly used keys. When dealing with lockouts on these, I often resorted to lock picking. They weren't common in the hospital, so picking wasn't required often. Even with odd locks, there were often code numbers on the lock that allowed me to make a key by code and then provide the staff member with a working key.

The most complicated situations involved malfunctioned or broken locks.

"In most cases, I'd walk over and use my master key, and rarely would I have to pick open the lock."

Institutional locksmiths have an advantage in these situations, as you'll likely deal with a limited variety of locks. Each brand and style of lock you encounter as a commercial locksmith presents new challenges. The time it takes to make a destructive entry to a malfunctioning lock can be unpredictable. Institutional locksmiths will often develop more streamlined techniques each time they encounter a type of lock. Also, there are often other devices in the same room with fully functioning locks that you can observe and find the weak spots or vulnerabilities.

As I had mentioned, most of the lockers in the hospital could be unlocked using one of the bypass keys on my key ring. Rarely, there would be a malfunction of the lock or locker. In a few cases, the problem was that an item of clothing was stuck between the door and frame of the locker. I'd usually apply inward pressure on the door to take the stress off the locking bolt or latch and then turn the bypass key to open the locker. Repeats were often prevented with a quick explanation to the locker user.

As we know, not all lockouts caused by malfunction involve the lock cylinder. The locking or lock releasing mechanism can fail with an otherwise intact lock cylinder. You need to diagnose the point of failure and attack that aspect of the lockout.

Physical Entry Techniques

When entry is required and the problem isn't simply a missing key, you need to determine what is preventing entry and take appropriate actions. That could involve some clever bypass technique or physical force, whether that ends up being physically destructive to the lock or the device itself. Locker lockouts not caused by malfunction typically involved a forgotten combination. A supervisor or charge nurse for that area of the hospital would often have a master list of lockers and the correct combinations. For that reason, many lockouts of that type never got reported because the person just got the forgotten combination and went on their merry way.

Many locker groups, however, were not recorded, and I'd usually open the locker with one of my bypass keys. That situation was problematic because the person couldn't be given the bypass key because it would open all the lockers in that room. That person would usually remove all important items from the locker until I could track down the combination. I'd email Master Lock the serial number of the locker lock, and Master Lock would send me the correct combination within days to give to the employee. Occasionally (but not often), I'd have my own lists of locker combinations I could consult if a supervisor or charge nurse didn't have the information. Often, I'd open a few lockers in that room to find the range of serial numbers for the group and have Master Lock send me an Excel file with all the combinations to use in the future.

Most current-generation safes use electronic keypads. Older dial-type mechanical safe locks will often have parts of the lock wear and cause slight shifting in the combination. You may have to start dialing a number higher or lower to get the gates to line up properly for easy opening. The same can happen with Master Lock





Figure 1. The plastic dial was easily broken off on these lockers.

Figure 2. The desk drawer has been removed.

locker locks. I can often diagnose the condition when a person tells me that the combination stopped working after previously working off and on. Before replacing the lock, I would usually try switching the numbers slightly high or low for each number of the combination. If I found an ideal variation that worked all the time, I would give the person the new combination and update the supervisor's combination list.

There were times that a locker lock would simply malfunction. Just using a bypass key would not overcome the internal problem of the lock. The plastic dial (see Figure 1) was easily broken off, and sometimes you could manipulate the mechanism under the dial. As mentioned earlier, the lock itself wasn't always the cause of the lockout. The handles that were used to open the locker after dialing the correct combination were often the cause of a lockout. The main body of the handle mechanism was made of die cast metal and was not particularly strong. There was a slight hook at the end of that metal piece that lifted the mechanism

in the locker door, causing it to open. Sometimes that tip would break off and lifting the handle wouldn't open the door because the tip wasn't there to lift the release mechanism. I'd generally drill off the handle and then manually lift the release mechanism to open the door. Then the handle was replaced.

Malfunctioning Drawer Mechanisms

As noted earlier, most of the desks in the hospital were older Steelcase brand. When there was a missing or lost key, my master key solved the majority of lockouts. When a lockout occurred with the correct key still available, it was almost never a problem with the lock cylinder itself. It was almost always caused by some kind of disconnect within the mechanism that transferred the rotating motion of the key in the lock cylinder into the metal tabs that blocked the drawers from being opened.

Although it wasn't an everyday occurrence, this happened frequently enough that I developed an efficient way to open drawers caused by this disconnect. The first time I encountered this scenario, it took me well over an hour to open the drawer and later fix the problem to prevent it from happening again. After the second or third time, I developed a streamlined and quick way of handling it with an old Slim Jim I had stashed away from my many years as a commercial locksmith. My auto lockout kit had numerous wire-type opening tools. I rarely used a Slim Jim to open a car anymore, so I just left the tool at the hospital.

The desk drawer has been removed in *Figure 2* to show the open cavity where the drawer had been. There are metal tabs protruding just beyond the tip of the Slim Jim. Normally, turning the key one way will extend the tabs that will block a protrusion on the matching side of the drawer to prevent the drawer from being pulled out. Turning the key the opposite direction would flatten these tabs to the inside wall of the drawer cavity so it would not block the protrusion on the drawer and would then not interfere or block the action of opening the drawer. That would be the unlocked condition of the desk.



Figure 3. You can see the tip of the Slim Jim in contact with a tab.



Figure 4. The author is using a screwdriver as a wedge.

The hardest part of developing my opening technique was figuring where to place the bend on the Slim Jim and how much of a curve to put on it. I did so with a drawer removed and by adjusting the tool in regard to the location of the protruding tabs that locked the drawers. You can see the tip of the Slim Jim (Figure 3) in contact with a tab. The Slim Jim is flexible, so I didn't have to make the curve perfectly exact because it could bend as needed. The most important thing was to not make the bend undersized. It could flex to a smaller bend with the tool inside the gap, but I couldn't make the bend go further once it was in the cavity. The curve couldn't be too large, but it could be too small.

With the drawer in place (Figure 4), I used a screwdriver to act as a wedge to spread the gap. Most of the time, I used two screwdrivers because the gap was so narrow, stiff and tight. I used one screwdriver to start spreading the gap and used a second screwdriver to press in deeper to open the gap wider to allow the Slim Jim to fit. Once the gap was wide enough (Figure 5), I would insert the Slim Jim to make contact with the tab and then press the tab inward until the protrusion on the drawer could go around it. Then I would pull open the drawer. With the drawer removed. I could move the whole mechanism that connected all the tabs to release all the drawers. One of the top drawers on either side was where the adjustment mechanism allowed me to adjust how far the tabs would move each direction in conjunction with the rotation of the keyed lock cylinder.

Sometimes, there were missing or broken parts within the locking mechanism, which prevented me from making practical adjustments to allow the desk to be safely locked and unlocked. In those cases, I would use strong tape to tape the tabs to the surface of the inside wall of the drawer's open cavity to prevent accidental permanent relocking. The desk will still have a lock that can operate with a key, but the desk is no longer lockable.



Figure 5. The author is inserting the Slim Jim to make contact with the tab.



Figure 6. The author has drilled for the control shear line.

Door Hardware Lockouts

Most doors in the hospital used Grade 1 key-in-lever locksets with BEST SFIC lock cylinders. Generic lockouts involving missing keys were typically resolved by opening the door with a master key. On rare occasions, a door lockout involved a malfunction of the interchangeable core. The usual culprit was a jammed master pin in one (or more) of the pin chambers that prevented the operating key from bringing the pin stacks to line up at the shear line. Since the door-specific operating key wouldn't work, it made sense that you couldn't open the door using a master key. With a more traditional pin tumbler cylinder, you'd drill the cylinder at the operating shear line to unlock the door.

When dealing with SFIC, once you drill to unlock the door, you need to remove the core to replace it with a new, functioning lock cylinder. To do that most efficiently, you need to drill for the control shear line (*Figure 6*) to remove the core, and then you can install a replacement core afterward to unlock the door.



Figure 7. The control key has been inserted.



Figure 8. The author is pointing to where he needs to drill to separate the posts from the plate.

"If the core is fully functional and the operating key can turn without physically unlocking the lock, the culprit was often a malfunction within the internal chassis itself."



Figure 9. The bottom one has already been drilled, and the author is drilling the top one.



Figure 10. A spring-loaded retainer pin blocks rotation of the plate.

If the core is fully functional and the operating key can turn without physically unlocking the lock, the culprit was often a malfunction within the internal chassis itself. In that case, it became necessary to dismantle the lock from the outside to remove the outer body of the lock and gain direct access to the latch mechanism that held the door in the closed position. Just as my first process for bypassing malfunctioned locking mechanisms in Steelcase desks was quite messy, difficult and time consuming, my experience with the BEST Grade 1 lever locks was similar. The first time dealing with that problem, I took quite a bit of time, and it didn't look pretty. After that bad experience, I went back to my shop and took apart one of my sample locks of that type and explored its weaknesses. I devised a quick and efficient method.

Now, these are locks where the cores are fully functional, but the malfunction is occurring in the lock chassis, causing a disconnect between the outer handle and the operation of the latch. Since the core operates properly, I start out using my control key to remove the core (*Figure 7*). With the core out, I'll remove the outer lever handle. The outer trim plate can be pried with a thin, flat-blade screwdriver and removed.

Most key-in-lever commercial locks have auxiliary mounting posts above and below the lock chassis that go through auxiliary holes in the door. These additional mounting posts prevent you from using a wrench to force the lock body to rotate to try to forcefully retract the latch. You can see the raised spots at the top and bottom of the plate below the trim plate. In Figure 8, I'm pointing where I need to drill to separate the posts from the plate. The bottom one has already been drilled, and I'm drilling the top one (Figure 9). With the posts detached, I'll be able to rotate the plate counterclockwise to unscrew the plate from the chassis. There is a spring-loaded retainer pin (Figure 10) that also blocks rotation of the plate. After depressing the retainer pin, I can rotate the plate. When I've rotated enough turns to separate the plate from the chassis (Figure 11), I can remove the plate, exposing the chassis within the cross-bore hole of the door. There are two screws that hold the inner and outer parts of the chassis together. The tip of my Phillips screwdriver points to the top screw in Figure 12. After removing both screws, the outer part of the chassis will pull out (Figure 13). We now have direct access to the latch retractor (Figure 14). I can use a small-tip, flat-blade screwdriver (Figure 15) to engage the latch retractor. I pull back on the latch retractor until the latch pulls inward far enough to open the door (Figure 16). At that point, I'd install a new lock and reinstall the core I had pulled out of the original malfunctioning lock. Since the core was not the problem, the same key could be used for that office going forward.



Figure 11. After rotating enough turns to separate the plate from the chassis, you can remove the plate, exposing the chassis within the cross-bore hole of the door.



Figure 12. The tip of the Phillips screwdriver points to the top screw.



Figure 13. After removing both screws, the outer part of the chassis will pull out.



Figure 15. You can use a small-tip, flatblade screwdriver to engage the latch retractor.



Figure 14. There is now direct access to the latch retractor.



Figure 16. The author pulled back on the latch retractor until the latch pulled inward far enough to open the door.

Simplex Lockout

Simplex push-button locks were generally used on doors that had multiple users where there was no intent to issue keys to everyone who needed access. All the locks still used Best SFIC lock cylinders that worked with a hospital master key. Occasionally, the keypad module would



Figure 17. The author drilled very close to the base in the location of the three screws on the left side.



Figure 18. The author had to drill the middle right side screw from the front.



Figure 19. Since there was clearance at the top of the lock body, the top right-side screw could be drilled from the top.



Figure 20. The body didn't fully release, so the top left had to be drilled until the body separated from the plate.

malfunction, and the combination wouldn't open the lock. In those cases, the master key would open the lock, and then I'd need to disassemble the lock and replace the module and reset the lock combination.

The way the lock works is that a clutch mechanism in the outer lock body retracts the latch after the correct combination is entered. If too much physical force pulls against the clutch mechanism, the latch cannot be pulled back to open the door. In one instance, the latch was bound tightly in the strike opening, and the clutch kept slipping, preventing the door from opening. The outer body is attached to a back plate by six short screws at the top, middle and bottom on each side of the lock body. The clutch mechanism is built into the outer body itself. If that part can be removed, you can directly access the mechanism that will retract the latch without the physical limitation of the clutch. This was the first and only time I attempted this type of entry, and I chose to drill at the locations of the six screws.

The way the lock was attached to the door affected my ability to access and drill the screws. The lock was attached to a left-hand door, so I could access the left side of the outer lock body from the side. I drilled very close to the base in the location of the three screws on the left side (Figure 17). Since the right side of the lock body was up against the doorframe. I had to drill the middle right-side screw from the front (Figure 18). Since there was clearance at the top of the lock body, I was able to drill the top right-side screw from the top (Figure 19). I drilled as close as I could to the surface of the door to make sure I separated the screw from the plate. The body didn't fully release, so I drilled further at the top left until the body separated from the plate (Figure 20).



Figure 21. The body has started to fall forward.



Figure 22. The lock body has started to come off the door.



Figure 23. Here is the inside of the lock body.



Figure 24. You can see the spindle that previously connected the clutch mechanism to the mechanism that retracts the latch.

The body started to fall forward (*Figure 21*), and with a little bit of wiggling and cajoling, the lock body started to come off the door (*Figure 22*). The inside of the lock body (*Figure 23*) shows where the six screws connecting the body to the plate were located. You can also see the clutch mechanism within the lock body.

You can see the spindle that previously connected the clutch mechanism to the mechanism that retracts the latch (*Figure* 24). After I removed the spindle (*Figure* 25), you can see the cross-shaped opening that I will engage to turn the mechanism to retract the latch. I used a hefty flat-blade screwdriver (*Figure* 26) to engage and turn the mechanism because the latch was



Figure 25. You can see the cross-shaped opening that can be engaged to turn the mechanism to retract the latch.

bound so strongly by the strike plate. If there had been no binding pressure on the latch by the strike plate, the clutch would have been strong enough to retract the latch just by entering the correct combination.

Final Thoughts

So, every lockout will require its own method of entry, but it's also obvious that a high level of familiarity will give you an advantage in developing efficient and effective techniques. Experiencing the same condition multiple times will allow you to make quick work of a situation compared to somebody encountering it for the first time. In that way, an institutional locksmith has a distinct advantage



Figure 26. The author used a hefty flatblade screwdriver to engage and turn the mechanism.

over a typical commercial locksmith when taking on a lockout. ☞



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 35 years, with more than 350 magazine articles published. He previously served as a contributing editor and a technical editor for *Reed's Security Reporter*. He has also previously written for *Locksmith Ledger*, *The Guild Report* and *The National Locksmith*. Sal was *Keynotes* Author of the Year in 1996.

of Mechanica Rechanical



Figure 1. Just *try* to find the HVAC unit in this room.

Take a look at one institutional locksmith's mechanical room policy.

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



H, THE HUMBLE, OUTof-the-way, largely ignored mechanical room. Thou hath many designations followed

Sewer Pump

Fire Pump

Telecom

Generator

• Fire Control

IT

Valve

by your surname, "Room":

- Electrical
- Utility
- HVAC
- Engineers
- Elevator
- Sprinkler
- Boiler
- Chiller

Transformer

Now, if I had done any actual research for this article, I could have probably doubled the above list of names. But, for the sake of brevity, I'm going to call all these rooms by the following name: "Mechanical Room." A problem that many institutions face is the often-monumental task of keeping mechanical rooms clean and secure. Let's deal with security first.

Security

Once upon a time, (let's say 30 to 40 years ago) when master key systems were created, building occupants were often given access to mechanical rooms under the (profoundly optimistic) assumption they would act like responsible adults and access mechanical rooms only when necessary for emergencies or to give access to service personnel.

Now that we're done having a good laugh at that assumption, I'll continue. When my former employer decided to implement a new master key system for academic buildings in 1992 (prior to my transfer there in 1999), they thought it would be a really swell idea to key mechanical rooms under each building master. Unfortunately, building master keys were released to school deans, department chairmen, office managers, department lab technicians and any other assorted personnel who requested a building master and said, "Pretty please with sugar on top." If that's not an arduous approval process for requesting a grand master key, I don't know what is.

The ensuing misuse — and downright abuse — of mechanical rooms enveloped most mechanical rooms not so much like a tsunami, but more like rising sea levels resulting from global warming (*Figure* 2). It just sort of happened without anyone realizing until it became a problem for the one person whose desire for safe and code-compliant mechanical rooms matters the most: the authority having jurisdiction.

The college then became the proud recipient of numerous "notice of violations" for non-compliant mechanical room safety.



Figure 2. While this room has a lot of usable storage space, it's very poorly organized.

The New Mechanical Room Policy

(*Really, it was the first policy ever... probably.*) Well, being the neat freak that I am, I couldn't just keep my big mouth shut during meetings about the avalanche of NoVs (Notice of Violation in code speak) the college was just handed by our new, overzealous fire safety inspector. I did something a government worker is generally not known for doing: I *volunteered* to write a new policy for mechanical room security.

Below is the first part of the new policy. You'll see that I call mechanical rooms "mechanical utility spaces" (MUS) in this policy. Academia seems to like creating and using acronyms, so I was just giving the people what they want.

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Figure 3. Storing material on top of functioning equipment is a "no-no."



Figure 4a. National Electric Code states that material cannot be stored within 3' of electrical equipment.



Figure 4b. Material is stored near electrical equipment *and* inside a containment pit.

"When my former employer decided to implement a new master key system for academic buildings in 1992, they thought it would be a really swell idea to key mechanical rooms under each building master."

Policy for Securing and Maintaining Mechanical Utility Spaces Purpose

This policy addresses the security, safety and cleanliness of all mechanical utility spaces. This policy also addresses allowable use as a storage area. Rooms and/or areas included in this policy are:

- Mechanical
- Electrical
- Elevator
- Telecom
- Fire Suppression
- Exterior Service Areaways

Definition

Mechanical Utility Space (MUS): Any space that houses equipment that is critical to the operation and/or safety of the building and its occupants.

Security

Generally, MUSs will not be available to the building occupants for use for storage.

- The Office of Access Control Services (Access Control) will ensure there is limited access to any MUS. MUSs will not be keyed to the building master unless approved by the assistant vice president of facilities operations. Only service personnel will have access to any MUS.
- Any staff other than service personnel requiring access to an MUS must have the approval of the assistant vice president of facilities operations in writing.

I know what you're thinking: This is pretty exciting stuff, but it *is* rather short. I agree, so at the time, I expanded the policy beyond just the security aspect to touch on the areas of cleanliness, maintenance and allowable storage uses not normally under my purview.

Maintenance & Cleanliness

MUSs will be maintained to minimize safety hazards and any other situation that creates potential fire code violations.

- Each MUS shall be inspected semiannually (every six [6] months) by the responsible office.
- Refuse shall be removed as needed. Floors shall be broom swept. In areas where airborne dust may affect equipment during cleaning, high-efficiency vacuums may be used to maintain floors.

Storage of Material Storage by Service Shops

- Only service offices or shops will be allowed to store material in a MUS for the sole purpose of making repairs, or for maintaining equipment for machinery in that specific room or building.
- Material shall not be stored on the floor unless otherwise restricted by weight or bulk. Shelving may be erected to store material as long as it does not create a fire code violation, impede the means of egress or affect the operation of machinery. Material is not to be stored on any functioning equipment (*Figures 3-4b*).
- Material shall be labeled as to which service shop or office owns said material.

Storage by Other Users

- Other building users will only be able to use MUS for storage with approval of assistant vice president of facilities operations.
- Allowable storage areas will be marked as such by Facilities Operations. Any material found outside a marked area will be considered refuse and will be disposed of accordingly (*Figure 5*).
- The user shall follow the criteria listed above for any assigned storage areas within an MUS.



Figure 5. It's difficult to get to the "breakroom" in the corner with all of the hoses and pipes on the floor.

I hope that wasn't too much excitement for you! The plan was to inform the building users that the mechanical rooms in their building were found to be in violation of code and they needed to be cleaned out. They were going to be given a timeframe to remove whatever they wanted to save. After that, the Facilities Department was going to remove all remaining trash/furniture/equipment. Then, my office was going to rekey the mechanical rooms and remove access via any department master key, including the building master. This was not going to be a very popular plan with the members of academia, as you might imagine.

At the time, I estimated that my office was going to have to rekey about 400 locks during this project. But working in one building at a time was going to allow my show to schedule any rekeying around other work (*Figure 6*).



Figure 6. Now *that's* a nice, clean mechanical room! *Image used with permission from Wikipedia.*

I officially left that facility at the beginning of 2023, so I don't know if this policy was ever implemented. But I wasn't going to wait around to find out. I'm off to greener pastures! @



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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 served on the ALOA board of directors as a non-voting member, and he is a trustee of ALOA Institutional Locksmiths and director for the ALOA Scholarship Foundation. He is 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.

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Rick Karas, RL, CFDI, AFDI, blends old with new during a lock installation on Geneva metal kitchen cabinets.

Figure 1. Here's one of the old locks in the venue.



Figure 2. All the kitchen cabinets were metal and appeared to be from the 1950s.



Figure 3. There was a decal in one of the cabinets with maintenance instructions.

CERTAINLY ENJOY GETTING INVOLVED IN PROJECTS THAT are a little different than the norm. I recently got involved in one such project at a local historic venue that's been serving my local community since 1911. It's a nonprofit club that holds monthly meetings and philanthropic activities, and it's also used as a rental venue for celebrations such as weddings and events. *Figure 1* shows one of the old locks in the venue.

The venue has a full kitchen for use by the members and those renting the venue. I was asked if I could help with securing the kitchen cabinets. Here's how I went about it.

Surveying the Site

The first order of business was to conduct a site survey of the kitchen's cabinet drawers and cabinet door locks, and this is what I found.

1 All the kitchen cabinets were metal and appeared to be from the 1950s (*Figure 2*). They were made by Geneva. I found something interesting that you don't see every day: a decal in one of the cabinets with maintenance instructions (*Figure 3*).



Figures 4-6. There were locks on some cabinets, but some were missing or broken, and there were no keys.



Figure 7. The author impressioned a key.

- 2 There were locks already installed in some of the cabinets, however, others were missing their locks or were broken (*Figures 4-6*) and there were no keys to any of the cabinets.
- **3** Because it was a historic venue, I was asked to repair and fix the existing locks. As for the missing locks, I was asked to find the exact replacement or as close to it as possible.
- 4 I did a count of the cabinets with locks and came up with 28 cabinets that needed to be secured. Of those 28, nine were missing locks, and two had broken locks. Of course, my initial thought was to replace all the locks. However, as stated above, my client only wanted new locks where they were missing or broken beyond re-



Figure 8. The author is decoding the key using a digital caliper.

pair. I was asked to fix anything that was repairable.

5 I removed one of the locks from a cabinet to take it back to my shop. It always seems easier to do things in the shop with good lights and no distractions. I wanted to identify a replacement. My plan was to take measurements of the cylinder length and diameter, bolt travel and spacing between the mounting holes to hopefully help identify a manufacturer and find a replacement. Additionally, because a key was not available, my intent was to make a key to the lock in my shop. If I had a working key, I could gather information about the depths and spacings of the cuts and type of keyway. This would certainly give me a nice start on the project.



Figure 9. Using the C37 card in an HPC Blitz, the author made a key.

Decoding the Lock

I knew that I needed information about the cabinet locks — such as the keyway, key blank, spacings and depths — and making a key would give me the answers. The cabinet lock was a disk tumbler lock, and a Y11 blank fit nicely into the keyway. I was easily able to impression a key for the lock (*Figure 7*).

After I made a key for the lock, I decoded the key using my digital caliper (*Figure 8*). The digital caliper provided me with the depths of the key that I had just made. I found that Card C37 National Cabinet Lock Single Sided Disc and Card C5 Chicago/Fort Single Sided Disc both had depths that corresponded to the readings that I got with my digital caliper. Using the C37 card (*Figure 9*) in my HPC



Figure 10. A National disc tumbler keying kit came in handy.



Figure 11. The replacement lock was a National Cabinet Lock (part number C8803), shown here in the CompX National Catalog.



Figure 12. Here's the packaging and part number of one of the new locks.



Figure 13. The author is inserting the existing key.



Figure 14. Next, Turn the key to 9 o'clock.

Blitz, I made a freshly cut key. I tried the key in the lock, and it turned in the lock like butter. Since the key worked so well, I did not make a key using card C5. I felt confident that the C37 card would get the job done. To get the last bit of information that I needed, I measured both the cylinder length and bolt travel. The cylinder length measured 15/16", the bolt travel measured about 11/32", the bolt width was 5/8" and center to center for the mounting holes was 17/16".

Replacing the Locks

Now that I had all the pertinent information about the lock, my next step was to find replacement disk tumbler locks. Both Chicago Lock and National Lock matched my measurements. I decided to go with National because I had a National disc tumbler keying kit (Figure 10) and I had successfully used Y11 blanks in the past on National Locks even though the National key blank that comes with the lock is a D8785. Using the online CompX National catalog, I found the replacement lock: It was National Cabinet Lock part number C8803. Figure 11 shows the lock in the CompX National Catalog. I placed my order for 12 locks. I only needed 11, but I ordered an extra lock because you just never know.

Rekeying the Locks

I received the new locks, and it was then time to take all of the locks apart and rekey them to a new key. *Figure 12* shows the packaging and part number of one of the new locks. To rekey the locks, the cylinders had to be removed from the locks.

Here's the process I used to remove the cylinders from the locks:

- **1** Insert the existing key (*Figure 13*).
- **2** Turn the key to 9 o'clock (*Figure 14*).
- **3** Turn the lock over so that the back



Figure 15. Then turn the lock over so that the back of the lock is facing you.



Figure 16-18. The author used a dental pick to push down on the retainer.



Figure 19. While holding down on the retainer, use the key and pull the cylinder out of the lock's housing.

of the lock is facing you (*Figure 15*). Note: I find that placing the lock in a vise helps.

- 4 Use a sharp, thin probe I used a dental pick (*Figure 16*) — to push down on the retainer (*Figures 17* and *18*).
- **5** While holding down on the retainer, use the key and pull the cylinder out of the lock's housing (*Figure 19*). *Note: Do not remove the key from the cylinder; as long as the key is in the cylinder, the wafers will not come out of the cylinder.*
- 6 Remove the lock's wafers and spring, and rekey (*Figure 20*).



Figure 20. Last, remove the lock's wafers and spring, and rekey.

"BECAUSE IT WAS A HISTORIC VENUE, I WAS ASKED TO REPAIR AND FIX THE EXISTING LOCKS."





Figures 21 and 22. The face of the lock is almost exactly flush with the face of the cabinet's door.

Tackling the Spacers

You may have noticed that in some of the photos, the face of the lock is almost exactly flush with the face of the cabinet's door (*Figures 21* and 22). This is because there were spaces between the lock and cabinet that were used to reduce the overall length of the cylinder. The spacers in the existing

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Figure 25. The author found this 8' piece of PVC lattice to use for the spacers.



Figure 23 and 24. The spacers in the existing locks obviously had been made by hand.

Figure 26. The price was definitely right.

locks obviously had been made by hand (*Figures 23* and *24*). Unfortunately for me, I was going to need nine spacers, and I knew I'd have to fabricate them. Following is how I tackled the spacer problem.

Making a Plan

I realized that making the spacers could become a chore if I didn't think things through. I wanted to keep the process as simple as possible and not over-engineer it. Also, I didn't want to put a lot of time into fabrication or pay a lot for materials. Conversely, I knew I wanted to fabricate something that would last as long as the locks. It was also important to me that the final product — the fabricated spacers —



Figure 27. Here's the part number.

looked as if they belonged with the locks and cabinets. In other words, I wanted them to seem as if they were made by the manufacturer. The original spacers were about ³/16" thick and roughly 1³/8" wide. I planned to use flat bar stock. However, for some reason, I was having a difficult time finding a piece.

I needed a plan, and I didn't yet have one. I decided that I'd visit my local home improvement store. I didn't have anything special in mind, but I thought I'd find something that would work. My plan, simple enough, was to walk around until I found it. I don't know if it was a good plan, but it was my only plan at the time, and I figured I'd give it a go.

Shopping for the Right Material

Looking through the stock of material in the metal aisle, I was disappointed with the selection. Additionally, the prices of metal at that store seemed to be a little expensive for my taste. I wandered around for a few minutes, and eureka! It was as if I'd struck gold. I found an 8' piece of PVC lattice (*Figure 25*) that was 5^{1}_{32} " thick and 1^{1}_{8} " wide; the measurements weren't exact but for \$4.84 (*Figure 26*) and made in America, I knew that I could make it work. *Figure 27* shows the part number. *Note that *Figure 26* shows the part number and price as shown online.



Figure 28. The author marked on the tape every 2".



Figure 29. The author marked and predrilled the center hole and mounting holes.



Figure 30. The holes were drilled out with a 3/16" bit.

Making the Spacers — Time Management

With my piece of PVC lattice, it was now time to make the spacers for my locks. Wanting to make effective use of my time, I decided I'd use some time management rules.

This is the process that I used:

- I laid the lattice on top of an old wood furring strip that I had and then placed blue painters' tape along the entire length of the lattice. This gave me a good surface to write on, and I could just peel the tape off later. I marked on the tape every 2" with a pencil (*Figure* 28). Look carefully — the marks are hard to see.
- 2 I then marked the center hole where the cylinder would go through and predrilled with a ¹/₈" bit; I did the same with the mounting holes (*Figure 29*).
- **3** I then drilled out the center hole with



Figure 31. A compound miter saw made the cuts quickly.



Figure 32. Here are the pieces after being cut.

a 1" hole saw on each piece and drilled out the mounting holes with a ³/16" bit (*Figure 30*).

- **4** It was time to cut them up into individual pieces. I taped the lattice to a wood furring strip so that I wouldn't move as I made the cuts.
- 5 Making the cuts was quick work with my compound miter saw (*Figure 31*). *Figure 32* shows the pieces after they'd been cut.
- 6 I then took the lock body of my spare C8803 (I knew that a spare would come in handy!) and attached the spacer using Cleco fasteners and pliers (*Figure 33*). The Cleco fasteners temporarily held both parts together. (*Figure 34*).
- **7** Using my belt sander, I sanded down the spacers using the spare C8803 lock body as a guide (*Figure 35*).
- 8 As a final touch, I used a hand file and neatly smoothed out any rough edges.



Figure 33. The author attached the spacer using Cleco fasteners and pliers.



Figure 34. The Cleco fasteners temporarily held both parts together.



Figure 35. The author sanded down the spacers using the spare C8803 lock body as a guide.

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Figure 36. The author installed new elbow catches where they were missing.



Figure 37. Pop rivets were placed in strategic locations to provide rigidity and support.



Figure 38. The mounting holes in the cabinets had been previously enlarged.



Figure 39. This is what the drill bit looked like after the hole was drilled while the lock was in the vise.

A Few Quick On-Site Repairs

With the prep work completed, I went back on-site to get down to brass tacks and complete the project. However, before I could install the locks and the spacers, I had to take care of a few small issues, issues that would certainly cause me problems later if not corrected.

During my initial site survey, I noticed a few anomalies. First, there were several cabinets that were missing elbow catches and needed to have new ones installed, so I went ahead and installed them (*Figure 36*). Second, a few of the cabinets had stress cracks

and/or were broken. This was causing the drawers not to sit properly in their guides and would ultimately cause an alignment problem with the lock's bolt if they were not corrected. I used pop rivets in strategic locations so as not to take away from the motif of the antique cabinets. None of the pop rivets could be seen when the drawers and doors were closed. This provided rigidity and support that the cabinets were lacking due to the cracks and breaks (Figure 37). The red arrow shows a pop rivet used to fasten a broken part of the cabinet together and the green arrow shows one of the broken parts of a cabinet.

Installation

The mounting holes in the cabinets had been enlarged by whoever had installed the previous locks (*Figure 38*). Consequently, I could not use the screws that came with the C8803 locks. Instead, I used a larger-diameter screw. I used #8 sheet metal screws that were ¾" long to attach the locks. The #8 screws were a little snug in the lock, so I slightly enlarged the mounting holes in the locks with a drill bit. (Note: I used a vise to hold the locks while I drilled the hole. Do not ever hold the lock in your hand and drill, or you're asking for trouble. *Figure 39* shows the drill bit after I had drilled the hole while the lock was in the vise.) Installing the locks went very well (*Figure* 40). The spacers were the perfect size and gave the cabinet locks a nice look, as they made the locks flush with the outside of the cabinets (*Figure* 41).

I keyed all the locks alike to operate on one key, and the locks blended in nicely to the cabinets.

Overall, it was a fun little project, and my client was happy with the way it turned out. So often, my customers want me to install the shiniest, most high-tech new lock out there. It was a nice change of pace to be asked to incorporate something new into something vintage to preserve the historic charm of the venue. It



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

control systems, intrusion detection systems and video monitoring systems. He works in both commercial and institutional settings. Rick owns Phil-Rich Lock, which serves the Washington, D.C., metropolitan area. He was named *Keynotes* Author of the Year in 2023.



Figure 40. Lock installation went well.

"I KNEW THAT I NEEDED INFORMATION ABOUT THE CABINET LOCKS — SUCH AS THE KEYWAY, KEY BLANK, SPACINGS AND DEPTHS — AND MAKING A KEY WOULD GIVE ME THE ANSWERS."



Figure 41. The perfectly sized spacers made the locks flush with the outside of the cabinets.

Tales Calculated ...

Tony Wiersielis, CPL, CFDI, relays a few things that drive him mad — and how he deals with them.

^{'M} SURE MOST OF YOU THAT have been around for a while have read *MAD* magazine at least a few times. For the younger folks, this magazine that came out in the 1950s was devoted to merciless satire of anything and everything. It was a riot to read and still is. Most people don't know that the original title was *Tales Calculated to Drive You Mad.* Therein lies the theme of this article.

That College in New York

I've been working at that unnamed college in Manhattan two days a week for six years now. It's a good gig, but it has its moments. There are about 15 buildings, and everything has BEST cores with multiple keyways. Most of the campus is near Fifth Ave, and the furthest buildings are on opposite sides of the island. August is the busiest time because all the new students flood in.

I have a bunch of loose-leaf books with the bitting lists for all the buildings. There are two types of pages: one that lists the room numbers and core marks (and sometimes the bitting), and the other is just the bitting list. They're a *mess*; some go back to 1982. There are pages with ripped loose-leaf holes, notes in five different handwritings, multiple cross-outs and changes, room numbers on the bittings pages that are different from the room number list and duplicate pages with different notes. And on and on.

Apparently, those before me rarely came back to the shop and annotated changes. All of this makes it difficult to trust what I'm reading when I look something up. Not always, but enough to be a problem. I wind up either making an educated guess and seeing if the keys bounce back, or I pull out the core and read the core mark to be sure. Going to a building to pull the core is a huge waste of time, but it does help. Sometimes.

Figures 1 and *2* show the factory core mark on the side and something hand-



Figures 1 and 2. Which is correct: The factory core mark on the side or what's hand-stamped on the face of the core?



Figure 3. This shows one of the locks the author was working on.

stamped on the face of the core. Herein lies the dilemma: Which is correct? You would think the core was recombinated to the face stamping. In this case, the factory core mark, 4B41, was correct. The problem was that to figure this out, I had to bring the core back to my shop to see which key worked, which means I had to go back and put it in the lock.

I may have said this in the past, but it's worth repeating: If I build a core or recombinate one, I never stamp the core mark on the face. If I reuse a core, I'll carefully grind off the side key mark and restamp it. BEST makes a stamping plate that makes this easy.

Why won't I stamp the face with the core mark? Several reasons. First and foremost, the keys are stamped with the core mark. If someone loses their keys close to their office space, someone else could put two and two together if they see numbers on the face of the core as well. Second, sometimes there's a lot of digits in a core mark and little room to stamp it.



Figure 4. The red arrow points to the raceway from the hinge to the prep, and the blue arrow is pointing to a temperature control module.

The Next Bit of Madness

Over the last few days, my crew and I have been replacing some electrified 45H mortise locks at a huge hospital in northern New Jersey. All the original locks were installed by "door guys" who have long since disappeared. The following is a lesson in why you want to have a "service loop" when you wire something — for the next guy and possibly your future self.

Figure 3 shows one of the locks I was working on, as far out of the door as I

"All the original locks were installed by 'door guys' who have long since disappeared."



Figure 5. The old wire is being stretched out.

was able to get it. In *Figure 4*, the red arrow is pointing to the raceway from the hinge to the prep, and the blue arrow is pointing to a TCM (temperature control module) through which the power to the lock passes through; more on that later.

The issue here is that either the connector or splice into the TCM is inside the raceway and impossible to get to. As far as I'm concerned, there's only one way this could have happened: The installers almost certainly connected the lock and didn't know how to stash the excess wire in the mortise prep. That "excess wire" would have been the service loop, but I digress. Their answer to the problem was to install the lock in the prep and pull the rest of the wire out the back of the raceway, cut it there and then splice into the hinge. Figure 5 shows us stretching out the old wire; it's barely the width of the door. To fix this mess, we replaced the old wire with 4-conductor cable and left a service loop. We had to do this numerous times, which is a huge time killer.

BACK TO BASICS Tales Calculated ...



Figure 6. The two connectors are as far out of the door as they can be.



Figure 7. The connectors are deeper into the prep.

The Possibilities

We had three possible doable setups in this situation. First, *Figure 6* shows two connectors as far out of the door as they can be. The smaller one is power, and the other is RQE (request to exit). This was easy to deal with. Second, *Figure 7* had the same connectors deeper into the prep, but still doable. You can see my hemostat holding the connector so I could fit the male plug into it. Not too bad. The third setup was no connectors at all. Everything had to be spliced — also doable if they didn't pull the "shorten the wire" trick.

I mentioned the temperature control module before. If you have a fail-safe lock

"The installers almost certainly connected the lock and didn't know how to stash the excess wire in the mortise prep."

and the power drops, the door will unlock. This could be the situation similar to what I see at the college. During the day, the doors are unlocked by dropping the power. At the end of the day, the power comes back on, energizes the solenoid and locks the door.

While the door is locked, full, continuous power is applied to the solenoid. Generally, this is 12 or 24 volts. This generates heat that can sometimes be felt on the door's surface. This is detrimental to the solenoid and tends to cause it to burn out prematurely at full power. The TCM prevents this by using the in-rush of current to pull back the solenoid and then dropping it to the lowest level that will hold the solenoid in place.



Figure 8. There is usually a non-BEST rim cylinder inside the tube.



Figure 9. A BEST cylinder is in the tube. The line on the cardboard is where the author will break off the tailpiece.



Figure 10. This is the foot piece of a door closer.





Figures 11 and 12. The author chucked the 1/4-20 screw into the chuck of his drill and held his file against the head of the screw as it turned.

Cool Hack: Rim Cylinder

I do a lot of standard cylinder to BEST cylinder conversions. Often, there will be a standard rim cylinder inside of a tube, as in *Figure 8*. Notice the cardboard and the pencil mark just above the tailpiece. The length of a BEST rim cylinder is usually longer than standard, and I'm reusing the tube. *Figure 9* shows a BEST

cylinder in the tube, and the line on the cardboard is where I'm going to break off the tailpiece.

Cool Hack: Stripped Closer Screws

Figure 10 shows the foot piece of a door closer. I enlarged the holes because the original screws were 12-24 and had pulled



Figure 13. You can see the difference in the width of the screw heads.

out of the metal frame. I decided to retap the holes to 1/4-20, but the heads of the screws were wider than the foot piece and wouldn't fit into it. *Figures 11* and *12* show how I chucked the 1/4-20 screw into the chuck of my drill and held my file against the head of the screw as it turned. You can see the difference in the width of the screw heads in *Figure 13*.

BACK TO BASICS Tales Calculated ...



Figures 14-17. The author turned a used but serviceable entrance function cylindrical knob set into storeroom function.



Figure 18. The author uses his Lab Annex to dump BEST pin chambers without the pins rolling around the floor.



Figure 19. Sometimes it's the little things during your commute that make a difference.

Cool Hack: Pinning a Knob

Figures 14-17 show how I turned a used but serviceable entrance function cylindrical knob set into storeroom function. In the first picture, I've pushed in the button and turned it to the locked position, then drilled a hole through the both the chassis and the button. Next two pictures show the multi-tap bit and me using it to tap an 8-32 hole. The last picture is a setscrew on which I applied some thread locker. To finish the job, I cut the screw off flush to the chassis with my Dremel and installed it. The screw isn't going anywhere.

You might be wondering why I did that instead of replacing the lock. Some time ago, the college was remodeling several floors in one of the buildings. I was asked to remove whatever locks I could find that were in good condition and reusable. I wound up with 30-plus locks, but not one of them was storeroom function. For the newbies, that means the outside knob is always locked and requires a key to open.

The lock I modified was a heavy-duty BEST knob that's very expensive. Money is always tight at the college, and sometimes they'll want a quote and reject it because of the price of commercial-quality locks. I don't want to use residential locks in an institutional environment, so these used locks are a godsend. Another plus is I don't have to go through the process of a quote and then a purchase order, or the possibility of the lock being back ordered or shipped in six weeks and all that rigmarole. In most cases issues need to be fixed *now*.

Cool Hack: Avoiding a Mess

Figure 18 shows how I use my Lab Annex to dump BEST pin chambers without the pins rolling around the floor. That's a BEST core/key blank box, but you can use anything that works. I leave the "book" part out. I also have a pin ejector that

will eject four chambers at once, which speeds things up. When I'm done, I empty the box into container and eventually scrap it.

Figure 19 is something I saw in NYC recently. If I must go to the buildings on the west and east sides of the island, I take a bus and my tool backpack. That picture shows two USB ports on the back of one of the seats. Rather thoughtful. *⊗*



Tony Wiersielis, CPL, CFDI, has almost 40 years of experience and has worked in most phases of the trade throughout the New York metropolitan

area. He was named *Keynotes* Author of the Year for 2016 and 2022 and serves as ALOA's Northeast Director. Reach him at aew59@juno.com.



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Global Tecspro, Ltd. Phone: +86-152-2033-2799 www.gtl.tw

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Stanley Security Solutions Inc.

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SERVICE ORGANIZATIONS

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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.

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