The official publication of ALOA SPAI, an international association of security professionals May 2013

KEYNOTES

SECURING YOUR SUCCESS

ALOA SPAI Elections 2013

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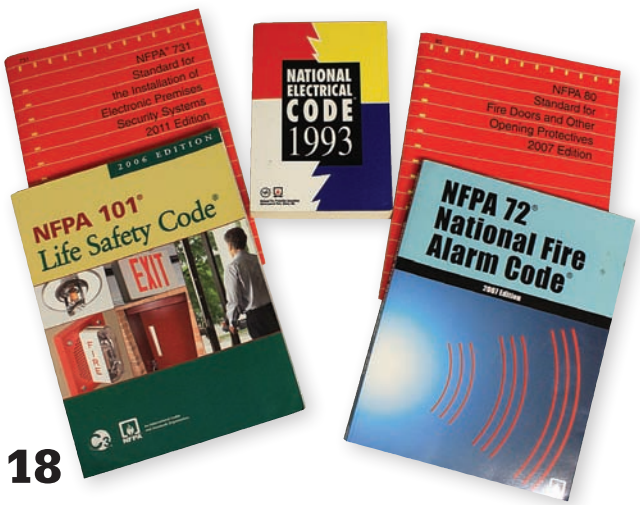

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KEYNOTES

MAY 2013 | VOLUME 59, ISSUE 5

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

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"It is my honor to run again as your president and continue the work our board started two years ago."

Keep the Momentum Going

SAFETECH in Lexington, KY, May 6-11, is here, so come on down to Kentucky. Joe Cortie and his board have been working very hard to make this the best show ever. Hosting the show in the mecca of safe and vault technology will bring safe technicians from around the world. Sign up and grab the last remaining seats for beginning and advanced safe classes.

Voting will start this month to elect new officers. It is my honor to run again as your president and continue the work our board started two years ago. We have voting in the Southeast, Southwest, and North Central for regional directors. The nominations are over, and we have two candidates running for each office. We're looking forward to working with the new directors.

When I ran for office two years ago, it was on an open-book policy. The ALOA SPAI corporation is transparent in all of our actions to its members. You as a member need only ask the question, and you will be given the answer. I get e-mails and some letters stating that we are not moving fast enough, and I sympathize with you, but we do move cautiously when spending association money.

Case point: We have been working on all of our websites for more than two years, and after a failed attempt by one contractor, we went out for bid again. We have a company that we like, and rather than give them all six websites to rebuild at once, we've given them one to start: www.findalocksmith.com.

Because this website requires our commercial locksmith members to input their specific information, we are waiting to see if the new format is acceptable by our members. This new site will give each member their own page where they can upload graphics, logos and additional locations. There is a small charge for anything other than basic and reasonable. It's important that when you receive notification to check and update your information on the site, you do it ASAP.

Keep the momentum going by getting involved with a locksmith association in your area, and help grow our industry!

Best regards,
Tom Demont, AHC, CAI, CFDI, CFL, CMIL, CML, CPS, ARL

"You have an opportunity to decide which of your colleagues will help steer ALOA SPAI into the future."

It's All About You

At the risk of sounding incredibly obvious, ALOA Security Professionals Association, Inc., is your organization. Everything we do is for you, our members. Aside from a relatively small staff of paid professionals, ALOA SPAI is led entirely by a board of dedicated industry volunteers — you, our members, in other words. And who chooses these leaders? You guessed it — you, our members.

Every year, we hold elections to choose new board members. In even-numbered years (2014, 2016, etc.), the positions of secretary; international director; associate region director; and northwest, south central and northeast region directors are open. In odd-numbered years (2013, 2015, etc.) the positions of president; and southeast, north central and southwest region directors are open. Every year, then, you have an opportunity to decide which of your colleagues will help steer ALOA SPAI into the future.

You'll find candidate bios, as well as a ballot, starting on page 22. You can also vote online at www.aloa.org. However you choose to do it, though, just do it. It only takes a few minutes, and it's your chance to directly impact the association by helping choose our next leaders.

Mary A. May
Executive Director

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ALOA 2013: It All Happens Here

There's only one event big enough to offer everything you're looking for, all in one place: It's the 57th Annual ALOA Convention & Security Expo, July 13-20, 2013, at the Baltimore Convention Center in Baltimore, MD.

Whether you want informative seminars taught by industry leaders or face-to-face gatherings with colleagues and suppliers, you'll find it all here at ALOA 2013. You'll also enjoy:

- Seven days of full- and half-day ACE classes technology
- More than 150 of the industry's top exhibitors (July 18-20)
- Hundreds of the hottest new products
- Can't-miss networking events, including a golf tournament, kickoff party and dinner cruise.

For the best in pricing and convenience, be sure to stay at the Hilton Baltimore, the official hotel of ALOA 2013. Everyone who signs up for a room will be entered into a drawing for this year's convention. Winners of the drawing, to be held July 11, 2013, will get either a full-convention package (first prize), a three-day package (second prize), or one of three prizes for a one-day class.

Register online for the ALOA Convention & Security Expo by visiting us at www.aloa.org.

ABUS Merges With U.S. Partner

ABUS has acquired its former partner company, APSCO, based in Phoenix, Arizona. This acquisition will help the company expand their sales and production efforts in the United States, according the company.

"With this step, ABUS will be able to provide even better customer service and respond to specific market needs more quickly," says Zac Twight, president and CEO at ABUS US. "We are excited to begin a more focused approach to growing the ABUS brand in the United States."

Now operating as ABUS USA LLC, the company's services and delivery dates won't be affected, as all APSCO employees will continue their work under the new ABUS leadership. "This acquisition will open the doors to many exciting possibilities," says Sebastian Rothe, export sales director at ABUS KG, Germany and board member at ABUS USA LLC. "As ABUS USA is a full member of the ABUS group, now we will be uniquely positioned to offer a wider range of products along with increased brand consistency and awareness to the U.S. market."

IN MEMORIAM

Raymond "Paul" Knecht, an ALOA member since 1967, died Saturday, March 2, 2013. The owner of A-1 Lock & Key Service, Knecht was the first president of the Florida West Coast Locksmiths Association, and vice president of ALOA. In 1979, he received the President's Award and was named as the Outstanding Locksmith in America.

Knecht was commissioned by the United Lutheran Church in America to be their first pilot in Liberia, Africa. He assembled, maintained and flew a Cessna airplane there in the 1950s.

ETI Releases New Key Switch

ETI Products recently introduced a Medeco-compatible interchangeable core switch control. The ICME series meets the needs of commercial and institutional applications where security, anti-vandalism and safety issues are required, such as in access control systems, sports complex equipment, power gates and doors, and alarm systems, according to the company.

The switch can be panel mounted or supplied with an optional faceplate in narrow stile, single gang and double gang configurations. The item is available in 15 heavy-duty switch functions with mountings fabricated of heavy materials with engineered integration of cylinder housings to the switch for durability and positive pole and throw protection. ETI key switches can be supplied in numerous architectural finishes and LED configurations.

NEWS BRIEFS

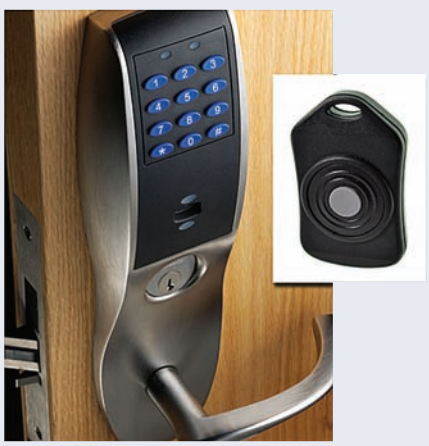
CCL Security Products now offers its catalog in a digital format, allowing users to view it from their desktop, laptop or mobile device.

IDN-Hardware Sales, a distributor of door hardware and security related products, hosted its 24th annual trade show March 21-23, 2013 in Novi, MI. With an emphasis on education, IDN-Hardware Sales offered a wide variety of classes for locksmiths, including automotive updates, access control solutions, door installation, safe opening, facility code compliance, and more.

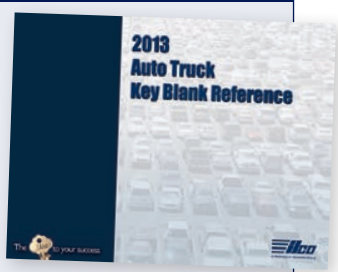
PRODUCT BRIEFS

Autodata Publications last month released its *Key and Remote Programming* manual, which covers domestic and imported vehicles from 2003-2013. The manual offers step-by-step key and remote programming instructions; system operation explanations, including unusual features; and battery replacement instructions.

SARGENT, an ASSA ABLOY Group company's Profile Series v.G1.5 lock with RF Fob enables teachers and others in authority to remotely secure classroom locks during an emergency, according to the company. The standalone access control lock can be opened using a key, PIN code or prox card. It is available in mortise lock, cylindrical lock or exit device configurations. The v.G1.5 supports up to 2,000 users and provides a 2,000-event audit trail.



Kaba Ilco Corp. announced the 31st annual edition of the *Ilco North American Auto/Truck Key Blank Reference*, designed to assist those cutting keys. Printed copies are available from Kaba Ilco Corp. distributors.



HAI by Leviton recently announced its KNX Gateway, an interface allowing HAI by Leviton's Omni and Lumina Ethernet-based controllers to communicate with and control KNX devices through KNX's standardized network communications BUS protocol. Lighting devices, temperature and energy management, motors for window coverings, shades, shutters and more are among the many KNX devices that can be controlled in homes and businesses from an HAI by Leviton interface or automated via controller programming.

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Edher Luis Melo Zacarias
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Reynosa, Tamaulipas
Juan Antonio Gallardo Anzaldua
Sponsor: Humberto Villegas

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Barcelona
Carlos Sicilia Salvador
Sponsor: Humberto Villegas

JAPAN

Fuchu-shi, Tokyo
Masakazu Matsuda
Sponsor: Kazuhiko Ide RL

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

We Need Your Help

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

MAY 2013

May 4-5

ACE: LLSSA Education Weekend and CLL Test Sitting
LLSSA Headquarters
Lafayette, LA
ALOA Education, (800) 532-2562, ext. 204
education@aloa.org

May 6-11

SAFETECH 2013
Lexington, KY
ALOA Education, (800) 532-2562, ext. 204
education@aloa.org

May 13-18

KDL Hardware Locksmith Education
KDL Hardware Supply
Tukwila Conference Center, Tukwila, WA
(206) 682-7383

May 18

Annual Spring Trade Show
KDL Hardware Supply
Tukwila Conference Center, Tukwila, WA
(206) 682-7383

May 20-25

ACE: Fundamentals of Locksmithing
ALOA Training Center
Dallas, TX
ALOA Education, (800) 532-2562, ext. 204
education@aloa.org

May 22-25

ACE: SERLAC 2013 Locksmith Convention
Tampa, Florida
ALOA Education, (800) 532-2562, ext. 204
education@aloa.org

30-31

Alternate Methods of Entry; Life Safety Codes w/ADA
Louisiana-Mississippi Locksmiths Association
The Quality Inn
Hammond, LA
www.loumiss.org

JUNE

June 1-2

ACE: Door Hardware and Wiring
ALOA Training Center
Dallas, TX
ALOA Education, (800) 532-2562, ext. 204
education@aloa.org

June 8-9

ACE: Complete Door Closers; Exit Devices & Exit Alarms
Alabama Locksmiths Association
Montgomery, Alabama
Barbara McGowin, (205) 338-1150
locksmithala@gmail.com

June 15-16

ACE: Certified Door Inspector
ALOA Training Center
Dallas, TX
ALOA Education, (800) 532-2562, ext. 204
education@aloa.org

June 19-21

IML Expo
Intermountain Lock & Security Supply
Sports Authority Field at Mile High Stadium,
Denver, CO
(800) 323-8046

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

Don't Turn Your Back on Liability

Failing to follow state codes could have a devastating effect on your business.

By Tom Resciniti Demont, AHC, CAI, CFL, CFDI, CMIL, CML, CPS, ARL

When I was asked to put together my Life Safety Codes class back in 1990 for locksmiths, it wasn't to address ADA or building and fire codes; it was to start locksmiths thinking about liability issues in their daily work. Of course, we all knew that we could be sued, but this was a deeper threat, because it could hide for years before lifting its ugly head.

When I put the course together, I studied the laws for ADA, building and fire codes. I was surprised to see that many locksmiths didn't have more than a basic understanding in these areas. The problem for locksmiths is that building and fire codes become the law as each state adopts them. Each year, your state's general assembly votes new and updated laws into the state's guidelines for all contractors, building owners, leasehold tenants, and of course, locksmiths, plumbers, electricians, alarm companies, etc. Laws are passed to safeguard the citizens and must legally be followed.

You could argue that your state doesn't adequately enforce current laws and codes. I'd probably agree with you. But when they enforce the laws — and they eventually will — it probably will have a devastating effect.

A Real-World Example

Here's an example taken from my personal experience. I delivered a Mosler 18" lug door cladded safe to a local big-name supermarket. I was a subcontractor for Mosler, which was a contractor for the supermarket. The specification called for this 1,800-pound safe to be placed on a four-foot square platform that was four feet off the ground, with the door on the top of the safe. No problem for us. We ran our battery-operated forklift off the truck at the loading dock, delivered the safe, and placed it on the platform. We had our delivery ticket signed, and we departed. Job done, no problem — or at least we thought there were no problems.

Five years later, we were sued by a woman we didn't even know. After receiving the papers, we contacted our attorney, who in turn contacted her attorney and received the documentation from the complaint. The negligence suit was in regard to injuries sustained from a safe we installed. As it turned out, she was also suing Mosler and the supermarket chain.

There was a law on the books stating that if you placed an object that could cause harm to another, you could be charged with the severity of the incident — meaning you could be charged ranging from a misdemeanor to a felony. Now I was becoming concerned.

The complaint read that on a specific day, the woman, who was the cashier of the supermarket, was placing moneybags

in the bottom of the safe when a coworker bumped the safe door. It came down and crushed both of her arms, to the point that one couldn't be saved and was amputated.

I was sick upon hearing this. Our attorney asked if we had installed this safe with the door up, and I told him yes. He asked if there were any safety devices on the door, and I truthfully stated that I didn't know, since the safe was locked, and our job was to deliver it to the location and place it a certain way on the platform. Fortunately, I never throw any paperwork away. I had the original paperwork order with the drawing that showed where the safe was to be placed. With this information, our attorney was able to release our company from the lawsuit. It still cost $12,000 to prove that we did nothing wrong.

A Costly Mistake

Here's another story that might hit home. A local alarm and access control company did a job in a county government building, for the building owner. The owner wanted to replace the old crossbar exit devices on 17 doors with push-bar devices. The access control company bought an alarmed exit device directly from the manufacturer and convinced the building owner that this was the way to go.

One year after the job was completed, the access control company received a letter from the county fire marshal stating that the installed devices didn't meet fire code. The exit devices weren't fire-listed exit devices; they were installed onto fire-labeled doors. The exit devices had to be removed and replaced with fire-listed exit devices. The alarm access company found out by calling the device manufacturer that the devices weren't listed for fire exit hardware, but were instead listed as panic exit hardware.

To make matters worse, the doors were wood-labeled — and by removing the new alarmed panic hardware and installing new fire exit devices, there were noticeable holes in the door. The fire marshal ordered that all of the doors be replaced with hardware recommended by the original door manufacturer.

> "Our attorney was able to release our company from the lawsuit, but it still cost $12,000 to prove that we did nothing wrong."

From what was happening, I guessed the alarm access company had upset the fire marshal — something you never want to do. The result was that the alarm access company lost 10 times the money they received for the original job, and were barred from working in that county again. There's no insurance policy that covers stupidity. By not knowing the building and fire codes, they installed the wrong hardware, and they had to eat more than $100,000 on top of the first attempt on this job.

Ongoing Liability

OK, let's say they didn't get caught because, as we all know, there are a lot of jobs being done that are not to code. Could a locksmith get by and not have to worry? Yes and no. He could luck out if a building or property owner doesn't keep any of the paperwork, and all the knowledgeable employees have left since the time the job was done.

In reality, many companies use computers for bookkeeping, and their records are rarely lost in today's business world. Can you say the words *reoccurring historical problems*? This means a job completed many years ago will always be hanging over your head until someone else either demolishes the building or assumes responsibility of that job by replacing what you did.

Your company could be liable were something to happen far into the future. God forbid there is an incident like a major accident or a loss of life in or around your hardware job, even if the hardware you installed didn't cause an incident. If you were responsible for installing something that was not to code, you broke the law. Non-code-compliant work would show negligence on your part — and believe me, you'll be sued along with the building owner and anyone else connected with this incident.

Don't put you or your company in this position for future liability. Take steps now to learn as much as you can about the building and fire codes in your state, and become an expert. Use your new knowledge to enhance and expand your business.

To further your knowledge, consider studying and take the test to become a certified fire door inspector (CFDI). Turn this into a new profit center. As a minimum, you should sign up for Life Safety Code classes when they're offered in your area, and start implementing them into all of your work.

If you own a company with employees, you'll need to train each of your installers on what to look for when replacing hardware. As the owner, you're responsible for what your employees do.

Code Questions

I receive e-mails every week from locksmiths asking questions about possible code issues. I'm happy to help, and I encourage locksmiths to ask. For example, I received an e-mail from Denny, a local locksmith asking about door coring, drilling a hole (raceway for wires) in a laminated wood door. I know Denny, so I called him. He is not only a locksmith but also a union carpenter with years of experience installing doors, frames and hardware. He explained that the manufacturer of the door sent him a work order to go out to a construction site and core drill a laminated fire door. He was concerned that he'd have a liability issue down the road.

I asked him a series of questions: Did the manufacturer of the door give you written permission to core drill their door in the

field? He answered yes. I received a copy of the work order with a drawing of where the modifications needed to be made.

I explained to Denny that the manufacturer of the door may be able to authorize modifications to their door without violating the label on the door, as long as it's under label service oversight. I would assume that the manufacturer ran the modifications past the testing laboratory before sending the changes to the installer. I did caution him not to misplace the paperwork; if there were problems with the opening down the road, he may be able to pass the liability back to the manufacturer.

Permission Granted — Or Not

This brings up a good point to cover so there are no misunderstandings. Who can give permission to modify a labeled door and frame?

1. The manufacturer of the door/frame maintains product liability.

2. The testing laboratory determines whether the modification voids the listing and labeling of the product.

3. The local authority having jurisdiction (LAHJ) determines whether the product complies with applicable codes. The LAHJ is always the final approval authority and, where necessary, will seek collective input from the manufacturer, listing agency and other qualified persons.

Each of these three listed above has a role when a door or frame is modified in the field.

▶ **The door and frame manufacturer** has the technical engineering ability to modify their product in the field without violating the structural integrity of the original testing procedure by the testing laboratory. The manufacturer should always contact the listing agency of the product to review any field modifications. Modification must be under label service (i.e., the Perfect Raceway Program is under label service as a preparation).

▶ **The testing laboratory** maintains — after inspection in the field — that the modifications do not alter the product from the original testing standard.

> "There's no insurance policy that covers stupidity. By not knowing the building and fire codes, they installed the wrong hardware, and they had to eat more than $100,000."

▶ **The LAHJ on site** may or may not have the technical knowledge to grant permission to modify a labeled opening in the field. Why do they do it? This is a judgment call based on life safety and security. In most cases the LAHJ will require a letter from the manufacturer of the item in question stating that the modification doesn't remove product liability from the manufacturer. The LAHJ must be concerned that they don't assume the manufacturer's liability by granting a modification that the manufacturer or testing laboratory hasn't approved.

When you're dealing with any type of modification to a fire door assembly or hardware, make sure that you have all of your documentation in order, and maintain it for life.

Who cannot give you permission to modify a labeled door and frame?

1. The building owner cannot, as this violates the code/law.

2. The building tenant cannot, as this violates the code/law.

3. Your boss cannot, as this violates the code/law.

▶ **The building owner** makes decisions that are often based on economics. It's your responsibility to explain that what they're asking you to do is against the law. The law is extremely clear. For example, to lock a stairwell door requires permission from the fire marshal, not the building owner, tenant or your boss.

▶ **The building tenant** makes decisions based on their concept of security, and they don't consider the effects to the remainder of the building. It is your responsibility to offer a safe solution to their problem.

▶ **Your boss** — this is the big one that gets everyone into trouble, whether you work for a locksmith company or at a facility. When you receive a work order to do a specific job, arrive on the scene, and discover that what you're being asked to do is against the law, you must stop and notify all parties that you cannot proceed as directed, or you will be breaking the law. This is an extremely serious issue.

Taking a stand for what you know is right may not be easy, as some employers can be contentious. Some employers may see the wisdom of your stance and work to find a solution. If your employer insists that you perform the work as ordered, ask your boss for written instructions. Remember though, if you do something that isn't legal, you can be held partially responsible.

There are many solutions to solving any specific security problem, and you must choose the one that maintains the life safety of all occupants and meets the current code/law. Do not put yourself or your company into a position where you need to contact an attorney.

I'm not an attorney, nor a member of the bar of any state. The above information is not to be regarded as legal advice. Should you have legal questions, contact an attorney or legal counsel.

Tom Resciniti Demont, AHC, CAI, CFL, CFDI, CMIL, CML, CPS, ARL, has been a locksmith for more than 50 years and has been writing and teaching life safety codes for over 20 years. As a certified architectural hardware consultant, certified fire door inspector and a certified master locksmith in two associations, Tom has the in-the-field experience to get the message across and have it stick in your mind. His latest book, *Life Safety Codes – In the Means of Egress*, was just released in Spanish.

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The First ALOA Latino Convention

Locksmiths from around the globe gather in Mexico for a first-of-a-kind event.

By Robert Mock, RL

If we are to achieve the goals set forth in ALOA's vision and mission statements, we need to reach out to locksmiths all around the globe. ALOA Latino was a successful and important step in fulfilling those directives.

The Presidente Intercontinental Hotel in Guadalajara, Mexico, was the site of the education, exhibition and convention events, February 27-28 and March 1-2, 2013. The ALOA SPAI board of directors, Executive Director Mary May, some key staff members, and event spearhead Humberto Villegas produced what we can only call a magnificent success.

The two days of classes were packed with eager-to-learn locksmiths from as far south as Argentina. The classes were taught by ACE instructors Tom Foxwell, RL; Keith Whiting, CML, CFL, CAL; Ed Woods, CML, CPS, CAL, CAI; William Lynk, CML, CPS, CAL; Grey Woodyear, CPL, CPS, CAL; and Stacey Hetchler, CAL. The students were excited that they could receive such quality instruction.

The two days of the convention were well attended by locksmiths far and near. The 25 exhibitors, as well as manufacturers' seminars, were a large draw.

On Saturday, March 2, ALOA President Tom Demont, Mary May, the board and I

all formed a panel for a question-and-answer session. The session was attended by about 60 locksmiths from Latino countries such as, Costa Rica, Venezuela, Argentina, Brazil, Ecuador, Peru, Chile, Puerto Rico, Spain and Mexico. Denmark and Japan were also represented.

The questions of the participants centered on this: "Why is ALOA here?" Our response simply: First, we wanted to know how ALOA could improve education and attract Latino-speaking instructors to our ACE programs. Second (and it goes without saying), ALOA would like to sign up new members. (By the way, ALOA has 48 newly registered ALOA Latino members, with many more awaiting clearance.) We all recognized and agreed on the necessity and importance of education.

On Friday night, several hundred locksmiths attended a gala fiesta given by ALOA Latino, with Villegas and his family as hosts. The fiesta was held in one of the courtyards of the Instituto Cabanas, located on the Plaza Liberacion. One building on the plaza dates back to 1573. The program for the evening featured mariachi music and traditional Mexican dance, while the dinner consisted of a variety of Mexican delicacies.

Demont presented the President's Award to Villegas for his tremendous effort in organizing and backing ALOA Latino, which proved to be a brilliant success. The gala provided time to network and make new friends. It was gratifying to see so many people taking the opportunity to discuss their experiences in their own respective countries.

All too soon, it was over, but many memories remain of the warm welcome and caring of the Mexican locksmithing family.

As our president has stated, "We are looking at other southern countries to host the second ALOA Latino." Perhaps more of us in the northern climes will attend and avail ourselves of this tremendous opportunity. If it's anything like the first one, you will be pleased.

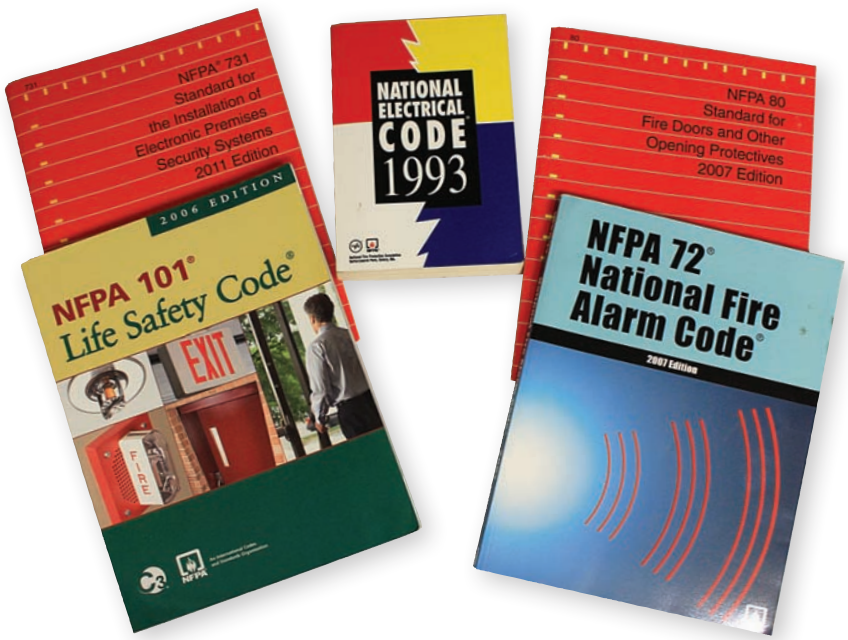
Gracias for a wonderful event. Adios — until the next time.

Robert E. Mock, RL, is the former president of ALOA.

Intro to Electronic Access Control

Find out how to get started in this potentially lucrative segment of the industry.

By Greg Perry, CML, CPS



The rules come from codebooks, and codes generally come from standards. Some of the most common standards/codes are written by the National Fire Protection Association (NFPA), although you'll also find codes coming from the International Code Council.

Over the past year, I've covered the fundamentals of electricity (*Keynotes February 2012 through January 2013).* With this foundation, it's time to start looking at electronic access control.

The first thing you need to find out is if you can legally do the job; if you can, you need to do it properly. This means you need to check our licenses, look at the codebooks and talk with the authority having jurisdiction (AHJ). Licenses and codes can be extremely specific, down to a city. Because *Keynotes* is distributed worldwide, it's impossible to cover all the various codes, but you need to know the appropriate codes.

Some jurisdictions require a license to perform any type of electrical work; others may require a low-voltage license; and others have no license requirements at all. Lots of articles have been written about various code topics. I'll only briefly cover a few code topics that may affect your job; I'll leave the in-depth articles to the code experts.

Remember, if you don't follow the appropriate codes, you could be required to correct the problem at your own expense, or you could be in court to explain your actions or inactions. If you don't have the appropriate licenses, it could mean you'll be paying your competition to correct the issues. I'll also look at some of the safety issues that might affect the job.

Don't Mess with the Marshals

The best place to find out your specific code requirements is the AHJ. This can be the building inspector, the fire marshal/inspector, an insurance official, the building owner or other government official; it may even be a combination of all of them. In bigger cities you might have difficulties because of conflicts even within a department of officials or among different officials.

Some of you may say the AHJ is only involved in new construction or remodels and most of your work is retrofits, so it doesn't affect you that much. An inspector may come back for a different job and reject your work — or what they're doing in Louisiana may spread. The Louisiana state fire marshal's office must review all plans any time an electrified lock is installed, no exceptions.

A few years ago when they instituted the policy, it was only a $20 fee for the review — not a lot of money for them to look at a plan. However, it will take some time to create and submit the plan, and that must be added to the job's cost. That's because a large number of jobs performed without inspections are substandard and have created safety/code violations in Louisiana. Keep in mind that

most state fire marshals know each other, so often what starts in one state will move to other states.

It's In the Book

All of the rules come from codebooks, and codes generally come from standards. Some of the most common standards/codes are written by the National Fire Protection Association (NFPA). You'll also find codes coming from the International Code Council. Standards are industry accepted practices, manufacturer's requirements, or according to NFPA, it's a document suitable for reference by another standard or code or for adoption into law.

Think of a standard as something for specific topics, whereas a code is a compilation of several standards or topics into a single volume. As an example, NFPA 80 Fire Doors and Other Openings Protectives is a standard, whereas NFPA 70 is the National Electrical Code.

Remember, a code is not a code for your area until it's adopted by your jurisdiction. Some jurisdictions write their own codes. For example, Chicago, New York, Las Vegas and Los Angeles all write their own codes, so they may not adopt any of the NFPA codes or the International Building Code. Although there may be minor differences among the cities and national codes, most all have the same intent and will be similar.

Most NFPA codes are written on three-year cycles, sometimes the changes will be minor and other times they may revamp the whole code book. Keep in mind that all the codes and standards don't apply until the jurisdiction you're working in adopts them. As an example, Gotham City might be working with the 2006 or 2009 edition of a code, while in the next city over, Metropolis, they might have already adopted the 2012 version. The federal government typically follows the newest version as soon as it is published.

Consistent Concepts

As mentioned above, it's impossible to cover all the different codes. However, there are some concepts that are appropriate in all jurisdictions for electronic access control work.

Some concepts sound extremely basic, including this one: Use the appropriate equipment. However, while most products are listed for an application, that doesn't mean they're appropriate for all applications. For example, a passive infrared motion sensor for an intrusion alarm may be listed for use in an alarm system, but it's total unsuitable for use as a request to exit sensor.

Often the code or requirements will change depending on whether or not the building has an automatic sprinkler system. An example is in NFPA 101, which addresses dead-end corridors. This code allows dead-end corridors no longer than 50 feet in buildings with automatic sprinklers, and up to only 20 feet in buildings without sprinklers; others may have different distances. (For the record, a dead-end corridor is one with no exit at the end.)

Use the correct type of wire or cable for the job, and keep class 2 and communication wire separate from higher voltage or non-power limited cables. NFPA 70 requires a minimum 2-inch separation. Grounding, I believe, is required by all jurisdictions. Make sure you have appropriately grounded your equipment.

Lastly most codes reference in some way that you need to follow the manufacturer's instructions — you know, those pesky papers you throw away when you open the box.

Remember that the AHJ decides which code and license requirements reign supreme. What may be acceptable on one side of the street may not be on the other, if it's a different town or jurisdiction. The best way to find out what is required is to ask the expert: the AHJ. It's always better to ask for guidance than to beg for forgiveness and be required to rework a job or replace hardware.

Codebook Terminology

There are some terms related to codebooks you shall know, the first two of which are *should* and *shall*. Should is a recommendation. If the code says you should do something, then you'd better have a good reason for not doing it. Shall is an absolute, meaning you have no choice — you will do it.

Next is *listed*. An item that is listed means a testing agency like Underwriters Laboratory (UL) or Factory Mutual (FM) lists the product as having met a minimum standard. UL does not approve the product. In fact, you'll notice UL specifically states on their website that they don't approve products. A product that is *labeled* will have a tag or label attached to it by an organization that's generally acceptable to an AHJ. Lastly, only the AHJ can *approve* and accept a product for use in a specific application. — *GP*

Reading Essentials

All locksmiths should have at minimum NFPA 101 (the Life Safety Code) and NFPA 80 on their bookshelf or on a CD. NFPA 70 National Electric Code is required if you plan on doing any type of electrical work. — *GP*

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

CFL Applicant Testing Requirements

PRIOR TO AN IAIL MEMBER SITTING FOR the CFL test, the following requirements must be strictly adhered to:

- The applicant must be a member in good standing in the IAIL for a period of one year prior to the testing date.
- Applicant must have successfully passed mandatory IAIL sanctioned
  - Investigative Locksmithing
  - Auto Theft and Arson Forensic
  - Forensic Locksmithing
  - Forensic Case Management
  - Photography
- Must qualify and submit documents that will exhibit at least (75) credit points, which are the minimum amount of points, which you must claim, to be able to qualify and sit for the test.
- Applicant must author and submit for review an article for publication in the ALOA SPAI *Keynotes* magazine. The article must be relevant to the field of forensics, and must be approved for publication by the IAIL CFL and peer review committees. The article subject may include but is not limited to a relevant case study (redacted), research, procedural guidelines (or variations of existing guidelines).

The above requirements are subject to change. However, the once an application is submitted, the applicant will not be subject to the newer requirements.

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ALOA ELECTIONS 2013

A Letter from the President

Dear ALOA SPAI Member,

The bylaws of ALOA Security Professionals Association, Inc. designate that the president of the association and directors of the Southeast, North Central and Southwest regions shall be elected in odd-numbered years. The bylaws allow voting by proxy, a procedure that allows all members to participate in the election of their respective directors and/or officers. A proxy allows you to authorize someone to vote for you at a meeting.

As president, I've called a special meeting at 10 a.m. CDT on June 7, 2013, at ALOA SPAI Headquarters, 3500 Easy Street, Dallas, Texas. The purpose of the meeting is to elect the officers and directors of the association. The ballot is in the form of a proxy, prepared for you to give specific instructions to the holder of the proxy. This will ensure that your vote is counted exactly as you desire. You must provide your name, member number and date, and must sign the form. (Failure to properly complete the proxy may result in your ballot being invalid.)

Please vote for president and your representative director(s). Write-in candidates are not allowed, and no one is "running from the floor" at this special meeting of the membership. Please vote online at www.aloa.org, or mail or fax the proxy, as soon as possible. In order for your vote to count, the holder of your proxy, as designated, must be present at the meeting and have the properly completed proxy with him.

This means that your ballot must be received no later than 11:59 p.m. CDT on June 5, 2013. You do not have to designate Barry Roberts, Esq., as your proxy. You may give your proxy to anyone else, but they must attend the special membership meeting on June 7, 2013, with your signed and dated proxy in hand.

Please participate in the future of your association!

Best regards,
Tom Demont, AHC, CAI, CFDI, CFL, CMIL, CML, ARL

For the Office of President

Vote for One Only | Eligible to vote: Active, probationary, retired, life and associate members

Tom Resciniti Demont, AHC, CAI, CFDI, CFL, CMIL, CML, CPS

Tom has proven his dedication to ALOA and our members with his constant push with the ALOA board for changes in operating and governing procedures. Mary May and Tom are a good team, working together to bring ALOA onto a profitable platform for growth.

Projects in Progress:

- Educational Training Facility, where construction has started but is moving slowly; the next step is to relocate our existing warehouse to the old greenhouse.
- ALOA Locksmith Task Force is having much success going after the scammers, and this is a constant battle that we will continue to fight.
- Development of new specialized locksmith credentials for industry growth.

By running again, I am agreeing to extend my tour of duty with ALOA SPAI an additional two years, and my time on the board will end in 2020 versus 2018. Thank you for your continued support.

For the Office of North Central Region Director

Vote for One Only | Eligible to vote: Active, probationary, retired and life members whose business is in Illinois, Indiana, Iowa, Manitoba, Michigan, Minnesota, Nebraska, North Dakota, Northwest Territories, Ontario, South Dakota and Wisconsin

William M. Lynk, CML, CPS

William M. Lynk, CML, CPS, has been a locksmith since 1975, having attained a Bachelor's Degree from Kent State University (Kent, OH) and a Master's Degree from Cambridge College (Cambridge, MA). He is an Interchangeable Core Specialist, Certified ALOA *A.C.E.* Instructor and an *A.C.E.* Instructor-Trainer. Bill teaches classes on IC and master keying through webinars, conventions, trade shows and for associations and corporations nationally.

With a passion for IC, Bill is an industry author, has written three published books, originated SFIC Technical Manuals for national and international lock manufacturers and maintains a working relationship with the major lock and security manufacturers throughout the world.

Bill is a recipient of the ALOA Education Department Service Award in 2012, volunteers as web designer/webmaster for the ALOA Scholarship Foundation and is a member of ALOA, ASIS, ILA, LIST Council, LSA and ClearStar, as well as the Owner of *ICLS Global* in Metro Detroit.

For the Office of Southwest Region Director

Vote for One Only | Eligible to vote: Active, probationary, retired and life members whose business is in Arizona, California, Colorado, Nevada, New Mexico, Utah and Hawaii

John Ilk, CRL, CPS

I reside in Maricopa, AZ with my wife Tracy and children Antoinette and Anthony. I have been a member of ALOA since 1992. My work experience has included a manager of a lock shop with 20 plus employees to locksmith lead for Arizona State University to my present position of service technician of a large safe manufacturer. My vision for ALOA is continuing and expanding the online training classes. This coupled with technical support gives the security professional the necessary knowledge and tools to be proficient in this trade. I look forward for your support in being Southwest director.

Thank you and be safe.

J. Casey Camper, CML, CPS

J. Casey Camper, CML, CPS, began locksmithing in 1974. His career includes over 20 years owning and operating 2 full service locksmith and security companies as well as service as a factory representative for a major lock manufacturer.

Casey is a Certified Ace Instructor who has taught at numerous conventions, regional security conferences, and trade shows. He is a Keynotes author and a consultant providing training, installation, and product testing assistance to locksmiths, manufacturers, and commercial clients. Casey is also a Certified Inspector of power operated doors, awarded by the American Association of Automatic Door Manufacturers (AAADM).

In 2005, he received the ALOA Ace Instructor and the 2012 ALOA Education service award.

For the Office of Southeast Region Director

Vote for One Only | Eligible to vote: Active, probationary, retired and life members whose business is in Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, Puerto Rico, South Carolina and Tennessee

Jim Wiedman, CML, CFDI

My name is Jim Wiedman and I have served 2 terms as your Southeast Director. I would again like to take this opportunity to ask you for your vote for a third and final term. I am a third generation locksmith and owner of Mid-State Lock and Key in Nashville, TN.

As a current board member we have been focusing on expanding member benefits, improving communication with our members, fiscal responsibility, and strategic planning for improving future conventions. I would like to thank everyone that has shared with me their thoughts, ideas, and concerns. I have fulfilled my promise to represent the members of the Southeast and I feel that I have made a difference. We have accomplished a great deal but there is much work that still needs to be done. Please allow me to continue to serve you and help make ALOA a better association for us all.

William "Bill" Boughman, CRL, CPS, CFL, ACI , CJS, CFDI

A second generation locksmith, William "Bill" Boughman was a life-long Philadelphian before moving to sunny Naples.

Prior to starting BB Locksmith, Bill owned and operated Guild Services, Inc. selling, installing and servicing alarm services in the Greater Philadelphia area. Bill has been in the security field in many different specialties including personal security and private investigations. Before that he was employed as a pipe fitter at Sun Shipbuilding Co. during his last year of high school and college where he majored in Psychology and went on to be a counselor. He was a member of The National Guild of Hypnotists and owned and operated The Mid-Atlantic Center for Hypnotherapy. He has served his community as a volunteer fireman and as a paramedic.

Bill is a member of NLA, ALOA, NSO, SAVTA, IAIL, IAFDI, and MLA.

He proudly holds the following designations. CRL, CPS, CFL, ACI , CJS, CFDI.

ALOA Elections 2013 Ballot

The undersigned, being an ALOA Security Professionals Association, Inc. (ALOA SPAI) member, hereby appoint Barry Roberts, Esq., my proxy and true and lawful attorney of the undersigned to attend the Special Meeting of the Membership of ALOA to be held at 3500 Easy Street, Dallas, Texas 75247 on June 7, 2013, at 10 a.m. CDT or any adjournment thereof, and to vote on behalf of said ALOA SPAI member as designated at right:

For the Office of President
Vote for One Only. (Eligible to vote: Active, probationary, retired, life and associate members)

❍ Tom Resciniti Demont, AHC, CAI, CFDI, CFL, CMIL, CML, CPS

For the Office of North Central Region Director
Vote for One Only. (Eligible to vote: Active, probationary, retired and life members whose business is in Illinois, Indiana, Iowa, Manitoba, Michigan, Minnesota, Nebraska, North Dakota, Northwest Territories, Ontario, South Dakota and Wisconsin)

❍ William M. Lynk, CML, CPS

For the Office of Southwest Region Director
Vote for One Only. (Eligible to vote: Active, probationary, retired and life members whose business is in Arizona, California, Colorado, Nevada, New Mexico, Utah and Hawaii)

❍ John Ilk, CRL, CPS

❍ J. Casey Camper, CML, CPS

For the Office of Southeast Region Director
Vote for One Only. (Eligible to vote: Active, probationary, retired and life members whose business is in Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, Puerto Rico, South Carolina and Tennessee)

❍ Jim Wiedman, CML, CFDI

❍ William "Bill" Boughman, CRL, CPS, CFL, ACI , CJS, CFDI

Print/type name of ALOA Member

Member number

Signature Date

This proxy must be signed and dated with member number to be considered valid. It must be received no later than 11:59 p.m. CDT, June 5, 2013, and mailed to Simply Voting, P.O. Box 10287, Eugene, OR 97440; fax to (214) 819-9736; or vote online at www.aloa.org/membersonly/.

CORBIN RUSS INTERCHANG

In the second part of this two-part article, **William M. Lynk, CML, CPS**, continues his investigation of issues relating to these ICs, including master keying.

In the first part of this article *(Keynotes, April 2013, p. 26)*, I discussed the interchangeable cores manufactured by Corbin Russwin, their construction, operation and master keying procedures, including corporate history, key classes, depth systems and product offerings. In this installment, I'll look at issues pertaining to master keying the standard IC, integration, old round, security IC, interlocking pins, Pyramid, hotel function, and removable core padlocks vs. removable cylinder padlocks.

Master Keying the Standard IC

Certain conditions should exist in a standard Corbin Russwin IC master-keyed system. These factory-based rules are extremely important and should be followed.

1. At least one bitting position in the top master key (TMK) should be higher than any number on any subservient key to prevent alteration of any lower-level key into a master or TMK.

2. The control key bitting will be identical to the TMK, with the exception of two positions of the four control chambers.

3. These two differing positions must fall between chambers 2 through 5 since these are the control chambers.

4. You must not use the two bittings that make the control key different within the system progression, lest the control shear line is simultaneously operated by the control key, jamming the core. You may select any two chambers from #2, #3, #4 and #5.

5. If you have integrated security cylinders into your system, then the two differing chambers must be positions 2 and 3, because these are the only chambers used for the control shear line in the IC security cylinders.

6. In general, do not use the shallowest cut in the control positions of the control key since there's no build-up pin to permit the deepest cut to operate beneath it.

Note: Some selective masters might be incorporated into the master key system, such as masters for an engineer, guard, housekeeper or janitor (ENG, GRD, HKP, JAN), which may have one of the cuts different from the top master. Make sure this information is included within your bitting lists.

A second note: Keep in mind that lock manufacturers sometimes deviate from these rules to accommodate special situations. In other words, they break their own rules. Be careful when doing so, as you must understand the concepts and the ramifications of such deviations before doing them yourself.

Integrating IC into an Existing Non-IC System

As discussed earlier, since chambers that actuate the control lug are not usually considered in creating fixed-cylinder systems, it's not usually possible to integrate IC later into theses existing systems. The exception might be 1) If the system is extremely small, and 2) if you have access to all bitting information.

The newly created control key, in conjunction with the TMK, must contain at least two bittings within the 4-chamber control lug area that can be excluded from all other existing bittings in use. In addition, they must be excluded from all future bittings in that system.

"Old Round" IC

This core was originally manufactured between 1964 and 1971 for use only in their 6-pin and 7-pin rim and mortise cylinders *(see Figure 1)*. Interchangeability, based on core size, was possible between these two hardwares. This unusual "IC" had the outward appearance of a mortise cylinder to the user.

As you can see from *Figure 1*, only one position occupies the control chamber on the control sleeve. Build-up pins are the same in all chambers, with the exception of the control chamber, which resides at the back of the plug/shell.

Keep in mind that since only one chamber is used for the control sleeve shear line, there are only three progression possibilities in that chamber *(Figure 2)*.

WIN EABLE CORES

Part 2

Security Cylinder

Corbin Russwin security cylinders are all 6-pin but are not UL listed *(Figure 3)*. The original cylinder was invented/patented by Walter Surko in 1978 and manufactured under the Emhart name. It was unique in that it was the first high-security cylinder that could be integrated into a conventional system or into an interchangeable core master-keyed system.

Prior to Pyramid, it was referred to as *high security*. In order to eliminate product confusion, it is now referred to as security, whereas Pyramid is *high security*.

Interlocking Pins

The Emhart interlocking pins were created to provide a true deterrent to lock picking *(Figure 4)*. As the key in inserted, the pins twist and unlock to allow the proper shear line to be created. When combinating, the pins are assembled into a single unit for that particular chamber and carefully top-loaded into that chamber.

Security IC — Keys and Depths

Since the security cylinders use the System 70 depths, one would expect six depths. However, only five depths are useable. This is because the System 70 shallowest #1 cut removes almost no key material. This wouldn't allow the chisel-pointed bottom pin enough room to be seated properly and allow for positive rotation. Thus, only five depths are used. Since the security plugs accommodate five depths, bottom pins also have

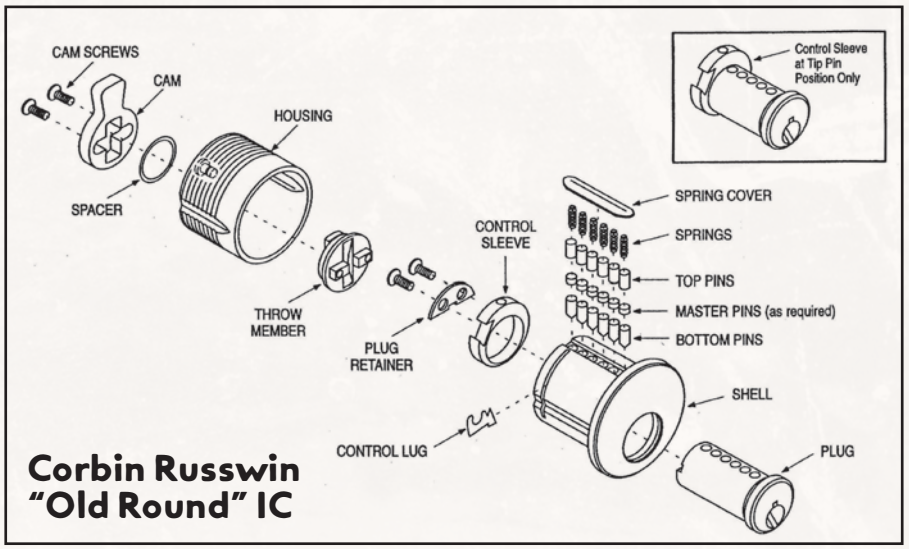


Figure 1. An exploded view of the "old round" IC.

No. 1	Corbin	981	D, H, N
TMK:	0	8	9
Control:	7	5	6
Possible Progressions:	1, 3, 5	B, 1, 3	0, 2, 4

No. 1	Corbin	981	D, H, N
TMK:	0	8	9
Control:	3	1	2
Possible Progressions:	1, 6, 8	B, 4, 6	0, 5, 7

No. 1	Corbin	981	D, H, N
TMK:	0	8	9
Control:	5	3	4
Possible Progressions:	1, 3, 8	B, 1, 6	0, 2, 7

Figure 2. Because only one chamber is used for the control sleeve shear line, there are only three progression possibilities in that chamber, as shown here (depending on the key keying classes being used).

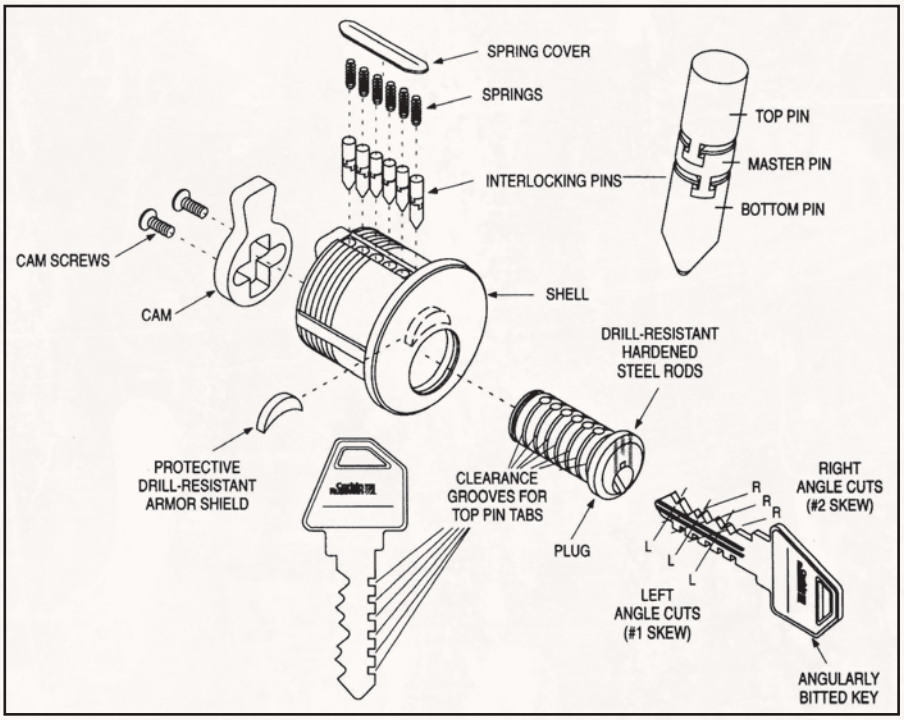


Figure 3. Corbin Russwin's security mortise.

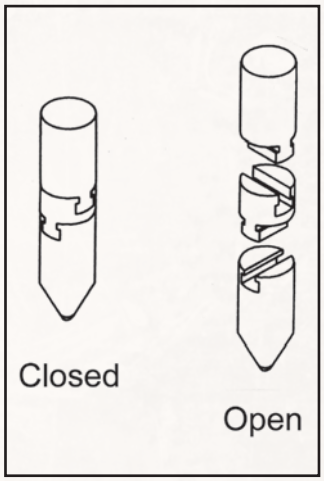


Figure 4. Emhart interlocking pins.

Figure 5

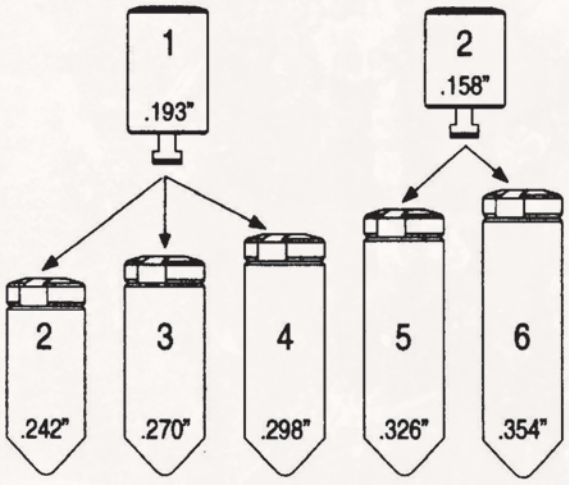
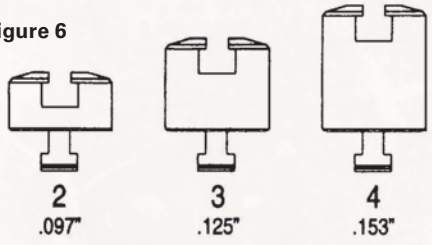


Figure 6



Figures 5 and 6. The security plugs accommodate five depths, so the bottom pins also have five increments. Master pins have three lengths.

Top Pin Selection Chart Security Pins					
Top Pin:	1	1	1	2	2
Plug Total:	2	3	4	5	6

Figure 7. Note: High-security key cuts are .006" deeper than standard System 70 cuts. This difference allows the security cylinders to be integrated into the same keying system as conventional cylinders.

five increments *(Figure 5)*. The special connecting top pins, however, only have two lengths and are selected based on bottom pin size (or BP + MP). Master pins have three lengths *(Figure 6)*.

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

The keys have small wards cut beneath the blade under each position to allow clearance for the top pin tabs. The cylinder plug also has wards around each chamber to acquiesce to the movement of the top pin tabs. The exploded view of the security mortise cylinder illustrates this construction feature.

Note: High-security key cuts are .006" deeper than standard System 70 cuts. This is because the blunt bottom pin tips cannot be seated in the V-shaped security root cuts. This difference allows the security cylinders to be integrated into the same keying system as conventional cylinders *(Figure 7)*.

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

Figure 8 shows that this security I-core has the following properties:

- Only two control chambers (2nd & 3rd chambers)
- Does not use the security interlocking pins within the two control chambers (positions #2 and #3)
- Has a .552" diameter plug (as opposed to .509" conventional plug)
- Uses angled security pins in non-control chambers only
- Must be top loaded (no other way to pin cylinder)
- Uses different springs for CTRL chambers
- CTRL key must be same as TMK in non-CTRL chambers

The key cuts are designated by left or right (although factory nomenclature uses

one for left and two for right). Sometimes a numerical notation will exist on bitting lists with either numbers or letter or all numbers. *Figure 9* shows three examples with the same bitting. The PK-70-HS pin kit is labeled by method number two as shown, as would many computer generated bitting lists.

Security IC — Pins

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

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

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

As a rule, the angle of the bottom pin will match the angle of the key cut. However, the rules change when combinating a master keyed system, as discussed later.

Non-Uniform Pin Stacks

As in some other security cylinders, there's no uniform pin stack total. That is, measurement-wise, if we measured the pin stacks from tip of bottom pin to top of the top pin, all of the stacks in the cylinder won't meet a uniform measured distance.

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

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

Master pins wouldn't be necessary with bottom pins #5 and #6, since the combined numerical value would be at least a seven, which would be incompatible with the incremental key cutting range of 2-6.

Pyramid High-Security IC

The most recent addition to the high security family of Corbin Russwin cylinders is the

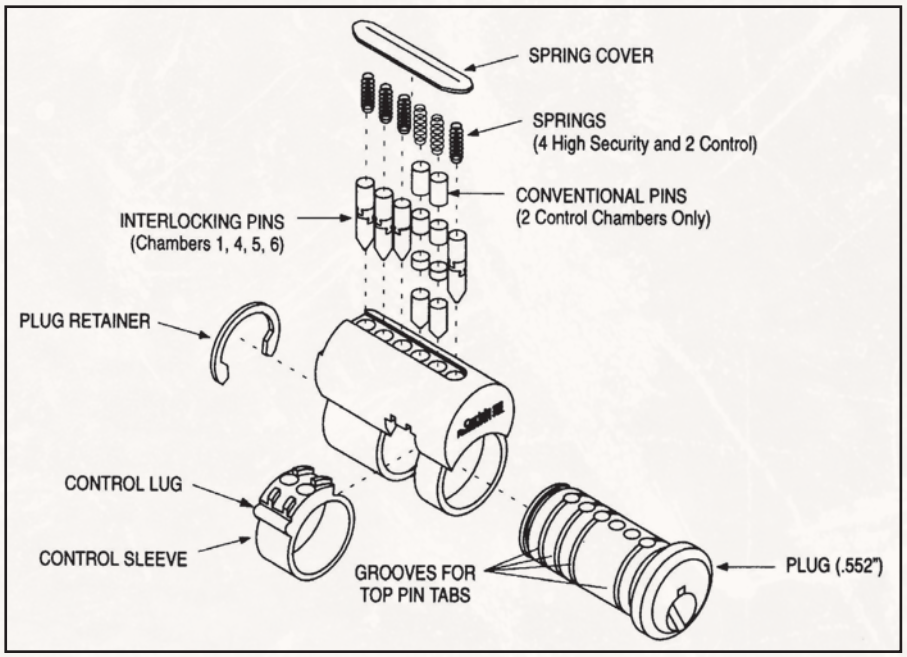


Figure 8. This security I-core has only two control chambers and must be top loaded.

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

Figure 9. Three examples showing with the same bitting.

High Security Pin Lengths	
Top:	#1 = .193"
	#2 = .158"
Master:	#2 = .097"
	#3 = .125"
	#4 = .153"
Bottom:	#2 = .242"
	#3 = .270"
	#4 = .298"
	#5 = .326"
	#6 = .354"

Figure 10. The security pins include two top pins, three master pins and five bottom pins.

Figures 11 and 12. The most recent addition to the high-security family of Corbin Russwin cylinders is the Pyramid line.

Pyramid Specifications

MACS: 7
Progression: Two Step
Blade Width: .334"
Depth Tolerance: ±.0015"
System: PreSystem 70
Spacing Tolerance: ±.0015"
Cuts Read BOW to TIP
Plug Diameter: 0.496"
Pin Diameter: 0.112"
Keys: Nickel Silver
Key Bow Type: #28
Pin Kit: PK-20-HS
Utility Patent No. 6,125,674 to year 2018
7-Pin Construction (6-pin IC housings)
Pins: Stainless Steel
UL437: Cylinders (not IC)
Integrate into Conventional Systems: N/A
Construction Master Keying: N/A

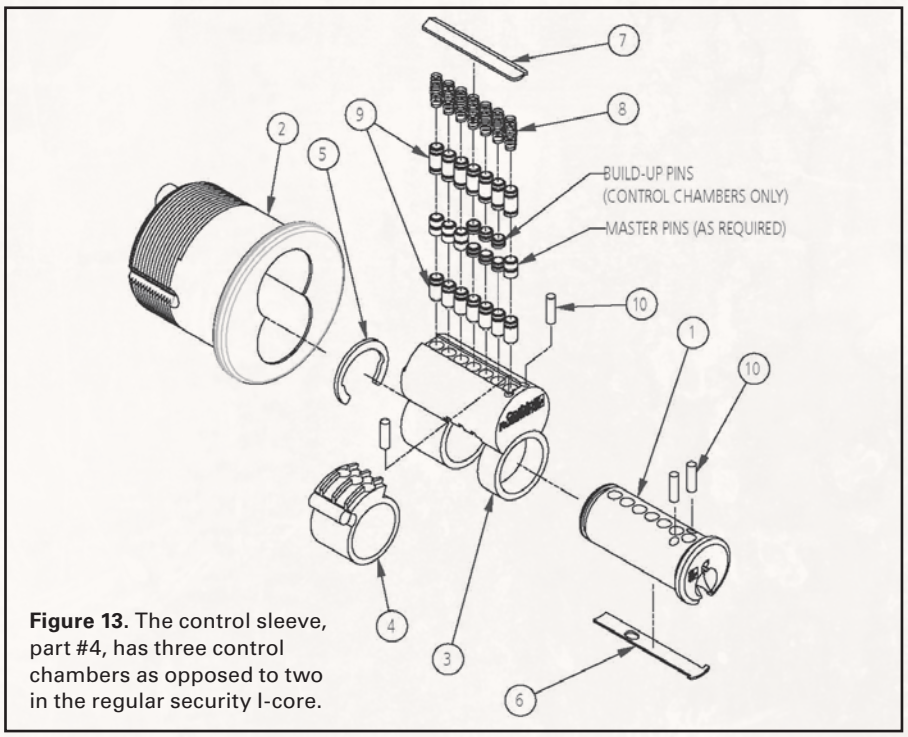


Figure 13. The control sleeve, part #4, has three control chambers as opposed to two in the regular security I-core.

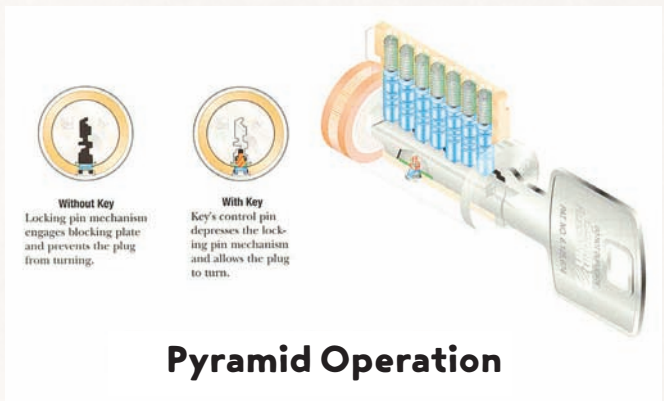


Figure 14. Without the patented key inserted, the plug is prevented from turning because of the locking pin mechanism and the blocking plate. With the key inserted, the locking pin mechanism in the shell is depressed by the key's spring-loaded control pin, allowing the plug to turn.

Pyramid line *(Figures 11 and 12)*. The Pyramid interchangeable core is not UL listed, but the fixed-type Pyramid cylinders are UL437. Pyramid cylinders possess a utility patent that won't expire until 2018.

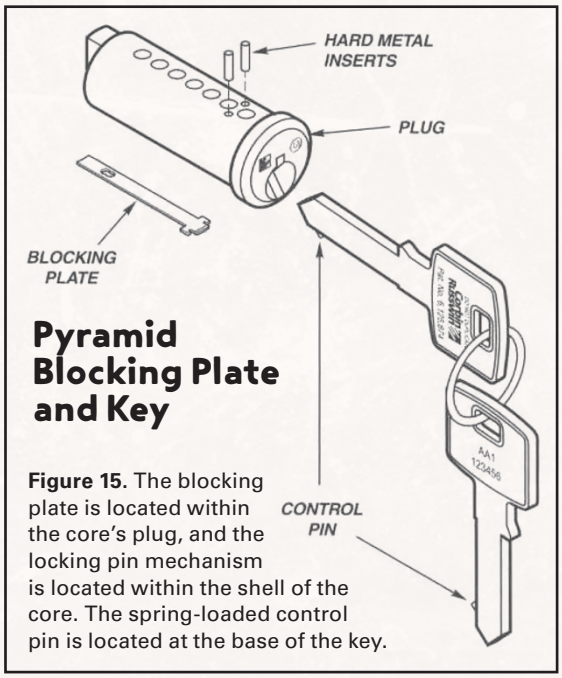
If you understand the previous section on security cores, then this cylinder won't be drastically different in its principles. There are some basic variations that include:

- Patented key with control pin high point
- Uses blocking pin mechanism; no sidebar mechanism is used
- Keyed to PreSystem 70
- 7-pin construction fitting 6-pin housings
- Use special pin kit PK-20-HS
- Pins are hardened stainless steel and pick resistant
- Cylinder is UL437 listed only with fixed type cylinders

Look at the exploded view of the Pyramid IC (*Figure 13),* and you'll quickly notice that the control sleeve, part #4, has three control chambers as opposed to two in the regular security I-core. Part #6 illustrates the blocking plate that only the patented "ridged" key will activate. Part #10 shows the permanently placed hard metal inserts for drill resistance. Also, there are no grooves around the chambers in the plug as found in the security IC.

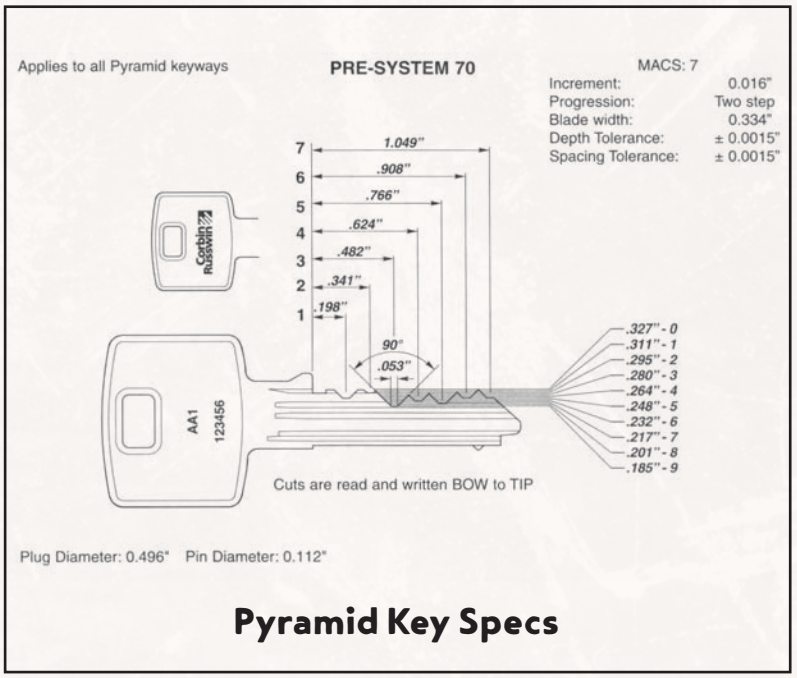
Figure 14 illustrates what happens within the plug and shell. Without the patented key inserted, the plug is prevented from turning because of the locking pin mechanism and the blocking plate. With the key inserted, the locking pin mechanism in the shell is depressed by the key's spring-loaded control pin, allowing the plug to turn.

Notice that the spring-loaded ball mechanism is installed within each Pyramid key at its base to activate the pin mechanism within the core. To clarify: The blocking plate is located within the core's plug, and the locking pin mechanism is located within the shell of the core. The spring-loaded control pin is located at the base of the key *(Figure 15). (For additional Pyramid specs, see Figures 16a-16f).*

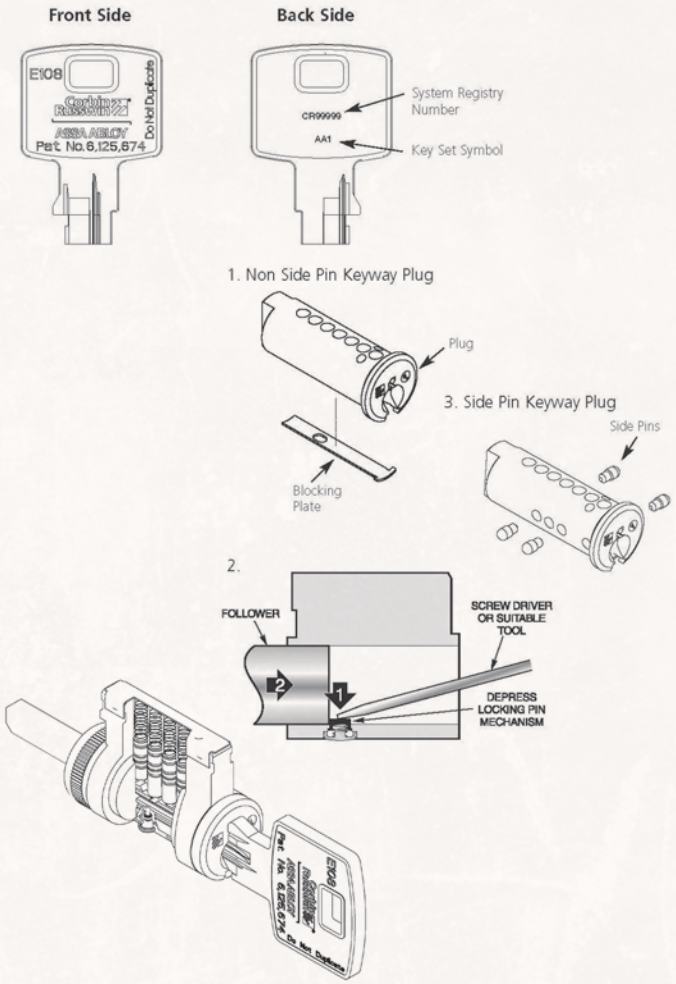


Pyramid Blocking Plate and Key

Figure 15. The blocking plate is located within the core's plug, and the locking pin mechanism is located within the shell of the core. The spring-loaded control pin is located at the base of the key.



Pyramid Key Specs



Figures 16a-16f. Additional specifications for the Pyramid line.

Pyramid Pin Lengths

Bottom	Master	Build-Up	Top
0 = .140"	0 = NA	-9 = NA	0 = .189"
1 = .156"	1 = NA	-8 = .031"	1 = .173"
2 = .171"	2 = .031"	-7 = .047"	2 = .157"
3 = .187"	3 = .047"	-6 = .063"	3 = .142"
4 = .203"	4 = .063"	-5 = .079"	4 = .126"
5 = .219"	5 = .079"	-4 = .094"	5 = .110"
6 = .234"	6 = .094"	-3 = .110"	6 = .094"
7 = .250"	7 = .110"	-2 = .126"	7 = .079"
8 = .266"	8 = .126"	-1 = .142"	8 = .053"
9 = .281"	9 = .142"	0 = .157"	9 = .047"
		+1 = .173"	
		+2 = 189"	
		+3 = 205"	
		+4 = 220"	
		+5 = 236"	
		+6 = 252"	
		+7 = 268"	
		+8 = 283"	
		+9 = 299"	

Pyramid Top Pins

Conventional	Length	IC Non-Control Chambers
Use with Plug Totals		Use with Plug Totals
5, 6, 7, 8, 9	←A .142"	
	B .205"→	5, 6, 7, 8, 9
0, 1, 2, 3, 4	←C .236"→	0, 1, 2, 3, 4

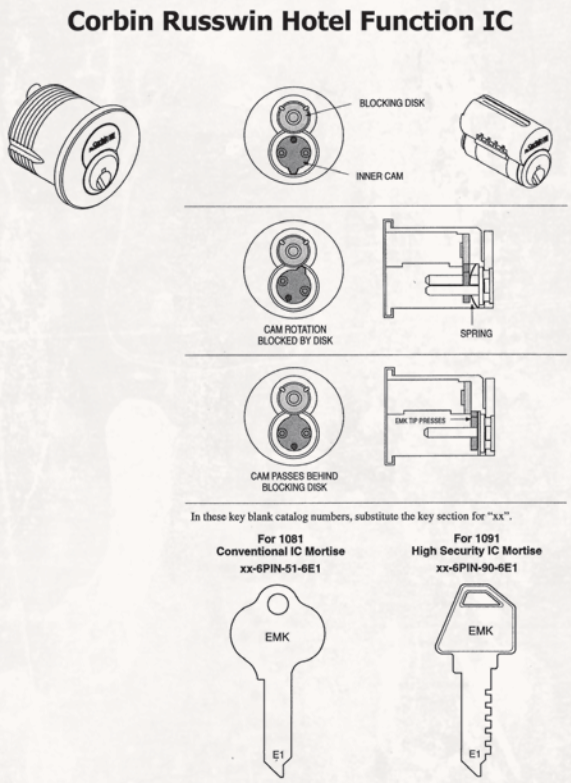


Figure 17. The hotel function I-core mortise accepts either the standard or security 6-pin I-core.

Figure 18. The EMK (bottom) is a special key that is, in effect, a 7-pin creation with a pointed or extended tip (horizontal to the key blade) that extends through the rear of the core and into the special 1071 IC motise housing.

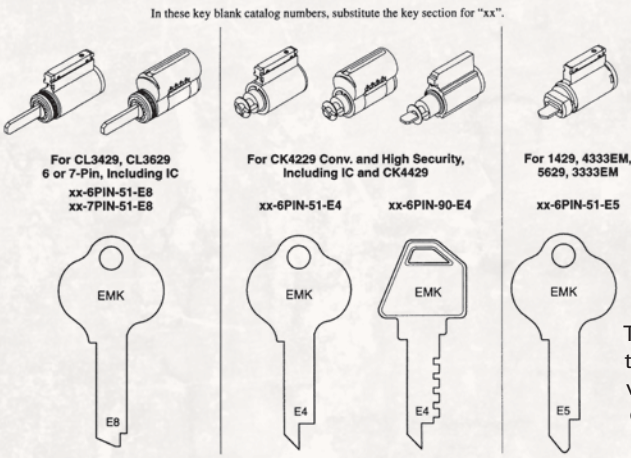


Figure 19. The shape of the undercut varies based on the cylinder type.

Hotel Function IC — Mortise

The hotel function I-core mortise accepts either the standard or security 6-pin I-core *(Figure 17)*. The true functionality of this hotel function is in the IC mortise housing and key. Pinning and operation of the I-core itself is no different than previously explained. The operating and master keys are also the same. However, the emergency key (EMK) functions in accord with the I-core mortise housing *(Figure 18)*.

The EMK is a special key that is, in effect, a 7-pin creation with a pointed or extended tip (horizontal to the key blade) that extends through the rear of the core and into the special 1071 IC mortise housing. The key pushes against a thin inner cam at the back of the I-core, which then passes under the steel disk (which regular keys will hit and will stop). When the cam is pushed under and behind the steel disk, the plug is free to rotate fully 360° in both directions to release the lock deadbolt. The key blanks for EMKs are as follows:

Conventional mortise IC: xx-6PIN-51-6E1
Security mortise IC: xx-6PIN-90-6E1

Again, the functionality of this system exists primarily in the housing and not in the core.

Hotel Function IC — Cylindrical

The IC version of this cylindrical IC hotel function is identical to the conventional cylinder: The outer knob or lever is always locked. When a guest presses the button on the inside, the lock is placed in shutout mode. Anytime the inside knob/lever is turned, the button pops back out. This is to prevent guests from lockouts.

When the lock is in the shutout mode, the indicator pin extends outward from the plug face, and a projection enters the rear of the keyway at the bottom. This projection blocks the guest's key, maid's key and TMK from entering the keyway.

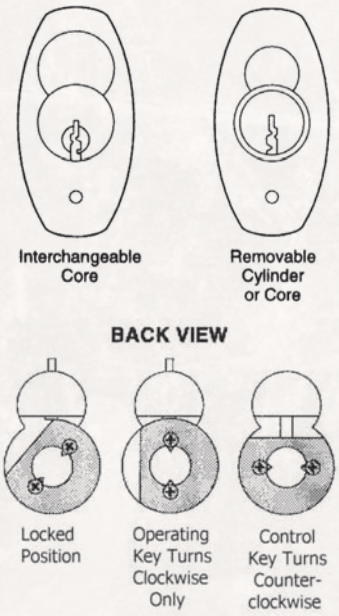
The EMK requires an undercut at the tip to bypass the keyway projection to gain access to the room, even in shutout mode. As you can tell from *Figure 19*, the shape of the undercut varies based on the cylinder type.

There is one caution: When testing keys in these cylinders, never allow the EMK to turn 180°. This is because the undercut can allow master pins in the last chamber to enter the keyway of the plug, and the cylinder will "rekey" itself. This situation will only occur when the cylinder is removed from its housing.

As you may have noticed, the functionality of the cylindrical IC hotel function lies within the IC cylinder, not in the housing.

IC Padlocks

Things just wouldn't be complete without a look at the Corbin Russwin I-core padlocks. Quite often people get confused as to the difference between a standard Corbin Russwin interchangeable core padlock and its kissing cousins, removable core padlock and



Figures 20 and 21. Try to depress the pin while the key is inserted into the padlock and turned fully clockwise. If the pin depresses, you can remove the removable cylinder. If it doesn't depress, then you have a removable core padlock.

the removable cylinder padlock. Here's the difference: With IC padlocks, both lobes of the figure 8 are the same diameter; with RC padlocks, the top lobe is about 30% smaller in size than the bottom lobe of the figure 8.

Removable Core Vs. Removable Cylinder

Ah, yes, the differences. From outward appearances — that is, outside the padlock — they appear similar *(Figures 20 and 21)*. But if you unlock the padlock and look down into the shackle hole, you'll see a small retaining pin.

To determine which you have, try to depress the pin while the key is inserted into the padlock and turned fully clockwise. If the pin depresses, you can remove the removable cylinder. If it doesn't depress, then you have a removable core padlock, which will require a control key (or picking skills) to remove from the padlock.

The removable core padlock was originally manufactured 1964-1977 but is not interchangeable with any other Corbin Russwin products, even though the core is installed/removed via a control key. It follows the same procedures as described in the *Combinating Standard Interchangeable Cores* section to pin.

The oddity of this device includes a ward pin pressed into the shell between the 4th and 5th chambers. A special plug follower must be used to bypass the stop pin as described. A control key can be made from any operating key by undercutting the tip of the blank by .040" from the tip and horizontally inward (toward the bow) at the bottom by .050", ending at a 45 degree slope toward the bow. It's good they stopped all this in 1977.

Final Thoughts

After reviewing the long and respected history of these two famous brand names and their products, one may wonder what will the future hold. That's a question we can only surmise.

With technology increasing at a blistering pace, and coupled with security mergers positioning lock manufacturers to gain more of the global market, anything's possible. One thing is for sure: Standardizing and streamlining is almost a necessity. It appears that eventually the .509" plug will be standardized, meaning all cylinder plugs will go the way of .552" as in the security and newer cylinders. That means that the standard IC and its antiquated old round core will fade like the evening sun. But oftentimes, change is good, as the future holds still for no one.

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

Figure 1. If the door pushes in to the right, it's right hand, or RH.

Figure 2. If it pushes in to the left, it's left hand, or LH.

Handing, Backset and Surveys

A handy guide to understanding some of the industry's most confusing concepts.

By Tony Wiersielis, CPL, CFDI

In this article, I'll cover some aspects of the trade that are sometimes confusing to beginning locksmiths: handing of doors and hardware, and backset. These are two pieces of information you must be intimately familiar with when ordering parts and interacting with other tradesmen. I'll also go into a logical method of surveying a job for hardware. This method will avoid the confusion of bouncing from door to door and having to figure it all out later.

Handing Doors

To correctly hand a door, stand on the outside or keyed side of the door. Before I go any further, we need to clarify two what *outside* and *keyed* mean within the context of hand-

ing. The keyed side refers to the side of the door you'd insert the key into as generally being the outside. Most doors are locked to keep people out, not in. If you have a door with only a push and pull plate, or no hardware at all, you'd want to be on the outside of the room to hand the door.

In this case, *outside* means the outside of a room, as well as the outside of a building. In an office building, for example, you might find yourself on the fifth floor standing in the hallway outside an office, or outside the building working on an exit door. In either case, you're looking at a door leading into a room or building.

Let's assume you're standing on the outside or keyed side of the door. If the door pushes in to the right, it's right hand, or RH *(see Figure 1)*. If it pushes in to the left, it's left hand, or LH *(Figure 2)*. If you pull the door out to the right, it's right hand reverse bevel, or RHRB *(Figure 3)*. Finally, if you pull it out to the left, it's left hand reverse bevel, or LHRB *(Figure 4)*.

I've run into some carpenters and contractors who always hand doors from the push side. They will stand on the push side of a LHRB door, push it out with their right hand, and call it RH. They then come into my shop and tell me they have a right-hand door. They ask me to set up a mortise lock for them and wonder why it doesn't work.

If you know how to hand a door, any time someone says "reverse bevel," you automatically know the door swings out. Because you know that, you also know how to hand the lock if you need to, and how they might mount a door closer. Both of these depend on how the door swings.

Handing Hardware

There are times when you might order RH hardware for a LHRB door, but not often. An example was LCN-handed parallel arm closers; you asked for an RH closer for an LHRB door. Safe deposit doors are also different. They can only swing out, yet an RH lock is used for an RHRB.

"You can't take a correctly installed cylindrical lock off an RH door and slap it on an LHRB door without flipping the knob over. In fact, a cylindrical lock with the cylinder upside-down is the hallmark of the amateur."

Door locks are different. You can't take a correctly installed cylindrical lock off an RH door and slap it on an LHRB door without flipping the knob over. In fact, a cylindrical lock with the cylinder upside-down is the hallmark of the amateur.

With mortise locks, it's critical to get the handing right. If you put an RH lock in an LHRB door, the latch will be in the right position, but the hubs won't be. The inside hub would be locked, and the outside would be unlocked. This could cause some embarrassing and potentially dangerous situations in which someone could be locked in the room, including you. (I'll explain how to change hands in an upcoming article.) With some brands of locks, you can't change the hand. I use a certain brand of anti-ligature lock (anti-hanging — as in suicide) in mental hospitals. This brand can't be changed in the field at all.

Again, always check the operation of the lock after you work on it. I don't care if all you do is tighten the faceplate on a mortise lock; make sure the lock functions properly before you go. This is where you catch the mistakes. I can't tell you how many times I've worked with other people and had calls about set screws not tightened, doors not latching easily, etc., after the job was done.

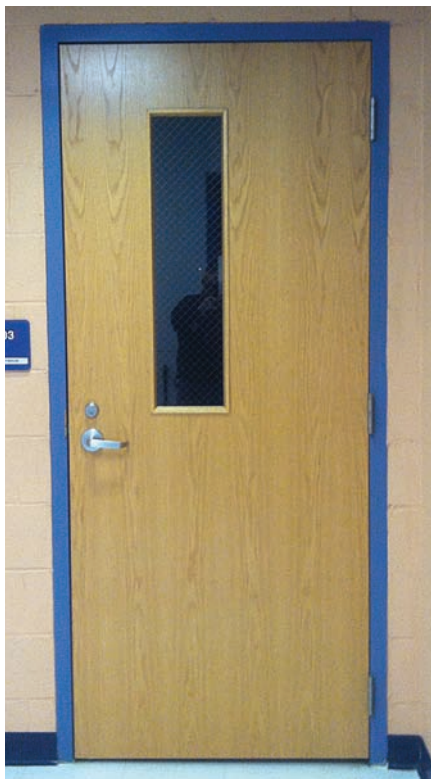


Figure 3. If you pull the door out to the right, it's right hand reverse bevel, or RHRB.

Figure 4. Finally, if you pull it out to the left, it's left hand reverse bevel, or LHRB.

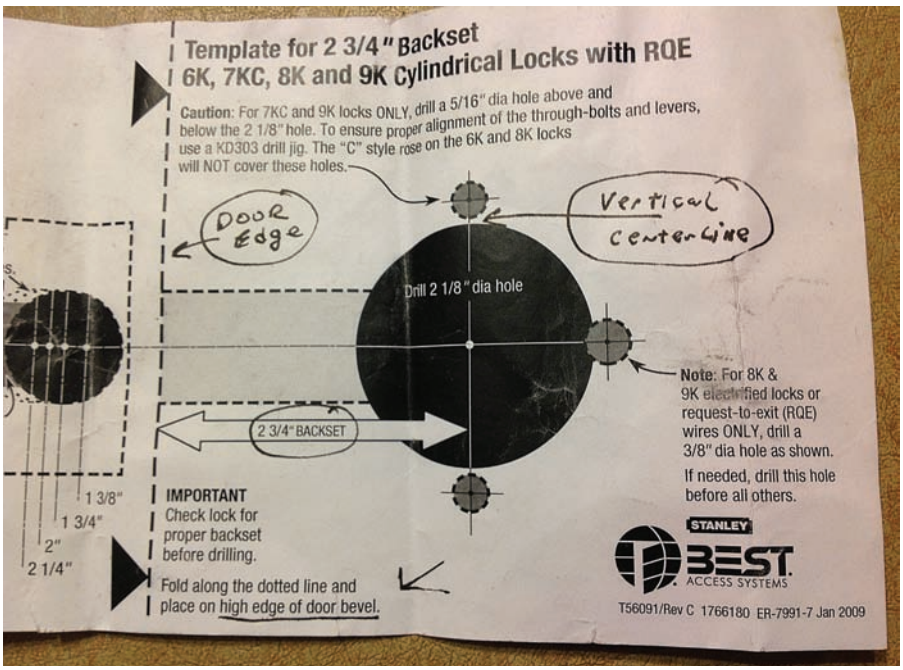


Figure 5. Backset is measured on the high edge of the bevel. Here, the author circled the double white arrow illustrating the backset. Some templates have markings for the low edge, allowing them to be used on both sides of the door.

Figure 6. The top view of a Don-jo wraparound plate partially installed on a door.

Backset

Backset is one of the most critical dimensions we have in this business. If you measure incorrectly, or guess, and choose the wrong backset, you'll kill the job before it even starts. Few things are more frustrating than getting to a job, especially a large installation, and realizing you have the wrong size latches and bolts and not enough spares on your truck.

Backset is the distance in inches from the edge of the door to the vertical centerline of the cylinder. It is a dimension, not the name of a part. It is always measured on the high edge of the bevel *(Figure 5)*.

What does *bevel* mean? Most doors, but not all, are beveled to allow them to close freely. If the lock and hinge edges of a door were perfectly square, the lock edge closest to the stop moulding would likely hit the frame before it closed. This is especially true with a tight-fitting door.

Figure 6 is an excellent example of a bevel, showing the top view of a Don-jo wraparound plate partially installed on a door. The wraparound plate is square, but the door isn't. The right corner of the plate butts up against the edge of the door. As you look at the left side, you can see a gap between the plate and the door.

Another way of understanding this is to measure the pull side of a door from hinge edge to lock edge. Do the same with the push side, and you'll see that it's a fraction of an inch smaller. The low edge of the bevel is on the side of the door touching the stop moulding. The high edge is on the side where you see the hinge knuckles.

If the door is prepped, as in new construction, but no lock is installed, you'd measure from the door edge to the vertical center of a mortise cylinder hole or 2⅛th cylindrical hole. If there's no hole, you'll be the one measuring and laying out backset.

The most common backsets for cylindrical locks are 2⅜, 2¾, 3¾ and 5 inch. Of these four, 2¾ is the most common, closely followed by 2⅜. You'll usually find 2¾ on standard 1¾" thick doors. 2⅜" is most often found on thinner 1⅜" doors, but either backset could be on either door thickness.

3¾" backset is not as common. In my experience, I've usually seen it on hospital doors being used with push-pull function locks. This function allows the latch to be retracted by either pulling or pushing the knob without turning it.

5" backset is even rarer than the others and is usually found on residential doors. Some manufacturers supply a link that attaches to a standard size latch to create a 5" backset. Kwikset, for example, sells a latch specially made to fit a 5" prep. In fact, older Kwikset installation jigs were able to prep all four common backsets.

Once in awhile you'll come across an oddball door with a knob installed dead center on the door and a 17" + backset latch. Unless you're near a well-stocked distributor, you'll probably have to order a replacement latch of that size, if they're even made anymore. I think I've worked on three of these in the past 30 years.

"Always check the operation of the lock after you work on it. I don't care if all you do is tighten the faceplate on a mortise lock; make sure the lock functions properly before you go."

On mortise locks, the common backsets are 2¾" and 2½", measured to the vertical center of the cylinder hole. Panic devices usually use 2¾, but the key here is to read the template and do what it says. Many panic bar templates are folded and placed against the stop moulding. This is done to ensure the head of the bar doesn't hit the strike.

Remember, when adding another lock to a door, use the same backset as the existing lock, if at all possible. (*Figure 7* is a screenshot of a handing cheat sheet.)

Figure 7. A screenshot of a handing cheat sheet.

Surveys

Now let's use some of the information you've just learned in a real life situation. Suppose you're surveying a building for hardware. You'll likely be walking around the building with someone who knows about the job and what's needed. We'll call him your contact.

If you survey a building, take as many notes as you can. You aren't going to remember everything, especially if the job doesn't start until several months later. Get a good supply of the small round stickers sold at office supply stores. If you can, get a copy of the floor plan for the building from your contact. This is especially helpful in new construction.

Start your survey at a specific door and write the number 1 on a sticker. Put that sticker on the frame leaf of the top hinge. On your notepad, start a numbered list and write what hardware, keying, handing and other pertinent information are needed for door 1. If the door has a name, like "Testing

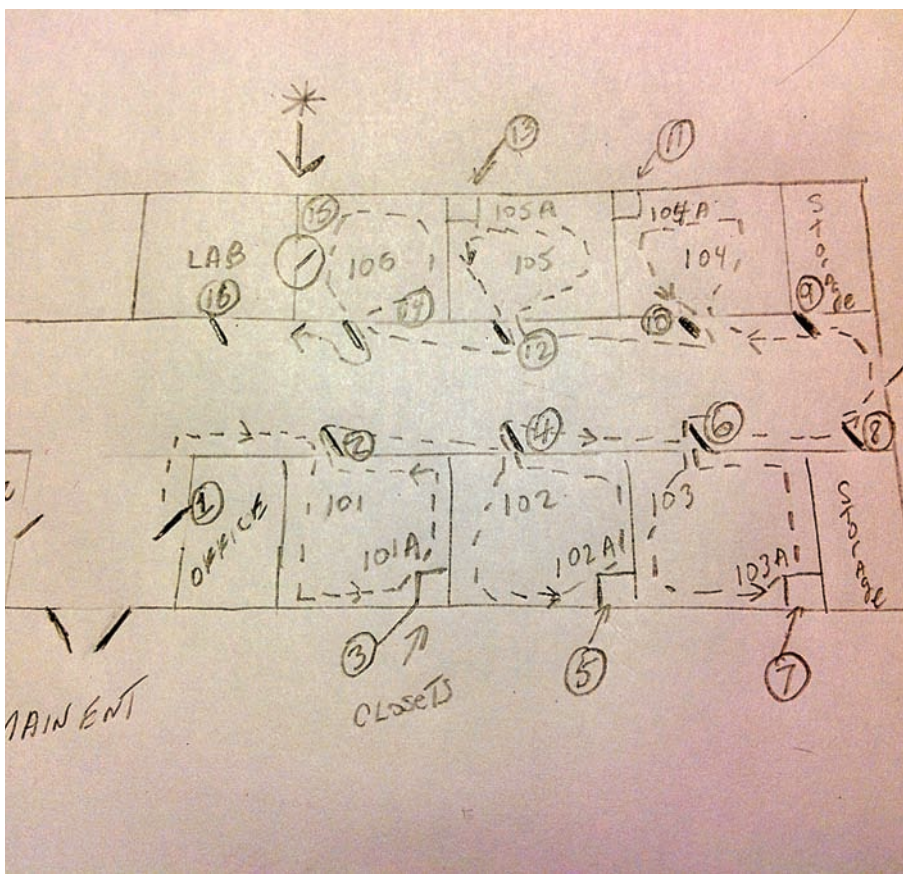


Figure 8. Follow the dashed lines to see the surveying route. The circled numbers in the diagram refer to the numbered stickers to be placed on each door.

Lab" or "112," put that down too.

Repeat the process with the other doors, using a logical order. As an example, consider a school with the main office in the middle of two wings, the north wing and the south wing *(Figure 8)*. Assume we're not doing the exterior doors.

Door 1 is the school office on the right side of the north wing. Follow the dashed lines to see the route you'd take. The circled numbers in the diagram refer to the numbered stickers you're placing on each door. Note that when there's a closet within a classroom, it gets numbered too.

Continue moving to your right around the building until you came back to the office again. You've followed a logical order that's easy to understand. On your door schedule, the numbered stickers would match your line items.

For example, item 1 on your survey might, have the following information: "Main office, LHRB, classroom function, 2¾, Keyed to master only." Item 2 might have "Rm 101, LHRB, classroom function, 2¾, Keyed to A1."

Doing it this way provides you enough information to crosscheck yourself at each door. This is especially important on new construction, where a room number might be written on a piece of tape applied to the door. If the painter takes off the tape, you'd still have the sticker on the hinge and the handing of the door to check against the schedule.

Take a look at the door between room 106 (#14) and the lab (#16). If you run into something like this, ask your contact which is the door's keyed side. In this case, door #15 is keyed on the 106 side of the door, and is therefore LHRB.

Tony Wiersielis, CPL, CFDI, has more than a quarter century of experience, having worked in most phases of the trade throughout the New York metropolitan area.

Testing, Testing, Is This On?

ALOA SPAI gets ready to introduce a new PRP testing system that will make the process faster and more efficient.

By Jim Hancock, CML, CMST

For as long as it has existed, the PRP testing has provided many challenges for the association, and for members who have tested or want to be tested. These challenges have been due to several factors, including prevalent technology for test delivery; the ever-changing locksmith and security profession; the relevance of the test questions; and, of course, the growing costs associated with the testing.

When the PRP was first instituted, the most efficient way, and indeed perhaps the only way, to deliver the test to the industry was via traditional methods of paper-and-pencil testing. This method allowed a proctor to monitor the test-taking to assure that the integrity of the tests and test-taking were maintained to the highest standards. Testing could take place at any ALOA or SAVTA convention, and as the years went by, the test was offered at regional shows and meetings.

A Problematic Method

This testing method prevailed through the first few years of the new millennium and is still one of the viable methods for taking the test. However, this method of delivery contributed to many of the other issues surrounding the testing.

First was updating the tests. For many years, there have been complaints that many of the tests are outdated and that the information is not viable in today's locksmithing world. This was indeed correct, as the process to update the tests was a bit tedious and slow. Various subject-matter experts (SMEs) had to present new material for the testing, and did so generally speaking without the advantage of working with other SMEs or the education, department due to the logistics of the process. And throughout the process, again, the highest premium was placed on the integrity of the test materials and its security.

All of this — coupled with the fact that most of the SMEs worked for a living either for someone or in their own business, and had little spare time to sit and write material, and to call back and forth to confer with other SMEs or the education department — explains why updating could take years, and in some cases was non-existent. On top of these issues, once a test was updated, it still had to be printed and bound, and the grading program tweaked to reflect the new test.

Not only did the prevailing delivery method cause some issues with getting the tests to participants due to the limited opportunities to take the tests, and cause some issue with updating, but the paper-and-pencil delivery method also has inherent costs associated with it. These costs have escalated as the years have passed, which of course means the price of testing has had to increase.

As an example, let's say XYZ Distributor wants to offer a test sitting for their tradeshow weekend. In order for there to be a test sitting, the costs associated with this sitting

are the shipping and return of the test materials; the fee paid to the proctor for monitoring the test, which may include lodging and travel, depending on the proctor; and the grading of the tests. These costs generally require that there be a minimum of 10 people pre-registered to take the exam, or the sitting has to be cancelled. All of these issues exist with the paper-and-pencil delivery.

In the mid-2000s ALOA entered into an agreement with a third-party test delivery company to try and ease these issues. The new delivery would allow someone to take the test, still in paper-and-pencil fashion, but at a location nearer their home, at places like community colleges set up as part of the test delivery network. It proved to be a little more convenient but also a bit more costly, as ALOA had to pay the extra fees associated with this delivery method and had to pass those along to the test taker.

The New Way

This brings us to 2013 and an announcement I am extremely excited to make: ALOA SPAI has entered into an agreement with Kryterion, one of the most prestigious test delivery services in the country, to offer our members more options for test delivery than ever before — which will also mean more convenient and more cost-effective, as well. The new service will still allow for the traditional paper-and-pencil delivery, if it's needed, but also will allow for Internet delivery right to a laptop, with web camera proctoring.

This method will mean more convenience but will also maintain the integrity of the testing. A web proctor watches the testing, and the software used to deliver the test essentially locks down the computer so no other programs or browsers can be used while taking the test. Thanks to the new service, once you finish your test, you'll know immediately whether you passed or failed, instead of waiting sometimes weeks to find out.

Because the new system allows is Internet-based, it also will allow the education department to have SMEs log in to update tests as frequently as needed to keep the tests viable. And as exciting as all of this is, the new system will allow for something else that has been needed and asked about for years: practice tests.

Watch your emails and *Keynotes* for the launch of the new test delivery system.

Jim Hancock, CML, CMST, ALOA's education manager, began his locksmithing career at the age of eight in his grandfather's lock shop in Gulfport, Mississippi. He has worked in every aspect of the business, from shop tech to mobile tech to operations management. In 2003 and 2009, he was presented with the ALOA ACE Award as Instructor of the Year. You can reach him at jim@aloa.org or (214) 819-9733.

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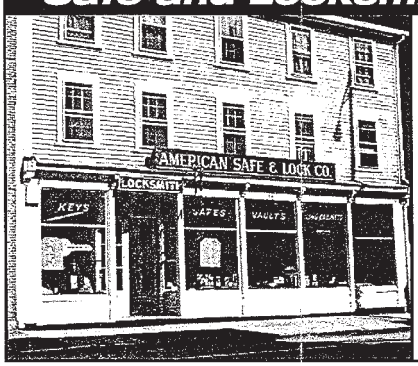

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