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

June 2020



SECURING YOUR SUCCESS

RE KEYING

A Subaru Ignition Lock

Learn how so you can get high-volume dealer jobs

Replacing the Housing on a 2014 Chevy Silverado

A Review of ALOA Online Education

Leadership in Crisis Mode | Pinning Charts for Corbin Russwin Access 3 LFICs | Tips and Time-Savers



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Features

A Slight Detour
Andrew Taylor walks you through replacing the housing on a 2014 Chevy Silverado.
Rekeying a Subaru Ignition Lock
Ed Woods, CML, CPS, CAL, takes you through this job for a dealer client.
'Husqvarna Keys? Whatcha Mean?'
Ed Woods, CML, CPS, CAL, gets to work on a surprising brand of motorcycle.
Creating Pinning Charts in Seconds
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Dormakaba PowerPlex 2000 Series
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Keynotes (ISSN 0277 0792) is published monthly except for a combined July/August issue by ALOA Security Professionals Association, Inc., 3500 Easy St., Dallas, Texas 75247. Subscription rates are \$25 per year for members. Periodical class postage paid at Dallas, Texas and additional offices.

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EAR ALOA MEMBER, We sincerely hope you're safe and doing well during the coronavirus pandemic,

which has devastated economies globally.

We know that many of our members are small business enterprises, and that disruptions to your businesses and personal lives have been severe. I'm sure you realize that ALOA, your organization, has felt these same economic repercussions.

As you're likely aware, we were unable to hold SAFETECH 2020. Regarding the 2020 ALOA Convention & Security Expo in Kansas City, ALOA is unable to hold the event due to the prohibitions against large gatherings and other restrictions

arising out of the coronavirus pandemic. These restrictions do not allow us to hold the event.

SPECIAL

ESSAGE

To ensure the safety of employees and members, we've also had to discontinue all in-house classes.

While we've had some temporary financial relief from the Payroll Protection Plan, we're nowhere near recovering the pandemic-related losses we've had so far this year. For ALOA to continue providing member support, we must make additional cost reductions.

Thanks in advance for your understanding as we continue to make the best of a difficult business climate. Stay safe, and please know that your staff and board members are working their hardest to protect and preserve ALOA during these unprecedented times. To continue supporting ALOA and ALOA Education, please consider taking one of our many webinars we are holding. Contact education@aloa.org for more information.

Respectfully,

Julippe

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

Stay Safe

T'S DIFFICULT TO START ONE of these columns lately without mentioning what's been on everyone's minds: COVID-19 and the related financial and health issues we've been collectively dealing with. I hope everyone is staying safe and taking extra precautions in your business and at home as we wait this all out. While a lot of us want to slow our lives down at times, this certainly wasn't the way we would have chosen to do it!

As you'll see in the message to the left, we are sadly unable to hold the 2020 ALOA Convention due to prohibitions against large gatherings. I will miss seeing everyone, but we are already looking forward to the 2021 ALOA Convention at the Caribe Royale in Orlando, FL. Please save the dates of July 25–31, 2021, and look for more information in your inbox and upcoming issues of *Keynotes*.

The Automotive Sector

In this issue of *Keynotes*, we have several features with automotive content. This is such a specialized area of locksmithing, and the technology is constantly changing. Take a look at those articles for some how-tos with good visuals.

If you're interested in learning more about this exciting sector of the industry, ALOA has so many classes available at conventions and at our training center in Dallas. From instruction on transponders and microprocessors to motorcycles and key generation, there are a wide variety of topics covered by true experts in these classes. Have you ever seen Mannie Natal teach? He's one of the most animated and passionate instructors ALOA has ever had, and you'd be lucky to take a class from him — or from any of our other automotive instructors.

For those who are already in the automotive segment, consider earning your Certified Automotive Locksmith (CAL) credential. Doing so lets your clients know that you are knowledgeable and adhere to professional standards. If you want more information on this or any other credential ALOA offers, please contact education@aloa.org or call (800) 532-2562, ext. 101.

OMLA's 50th Anniversary

Now that we're missing in-person events and gatherings, I'll tell you about one I attended right before all of this mess began. I was happy to attend the Oklahoma Master Locksmiths Association's (OMLA) 50th anniversary celebration. In a fun twist, their president was also celebrating his and his wife's 61st wedding anniversary. This was a great group of fine folks, and I thoroughly enjoyed spending some time with them.



I hope that I can attend more such gatherings in the near future to spend time with my fellow locksmiths. Until then, stay safe and healthy, and I'll see you online.

Respectfully,

With

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



The OMLA celebrated its 50th anniversary in the spring.

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Google Announces Identity Verification for Advertisers



OOGLE IS ROLLING OUT A NEW INITIATIVE THAT WILL HOPEFULLY HELP with the industry scammer problem. Any business advertising on Google will now have to complete a verification program. Advertisers will be required to submit personal identification, business incorporation documents or other information that proves who they are and the country in which they operate. Beginning this summer, Google users will start to see disclosures that list this information about the advertiser behind the ads they see.

This verification system is designed to limit scammers' attempts to misrepresent themselves and to give consumers information about who is directly behind each ad they see. Existing advertisers will have 30 days to complete paperwork once received from Google. If they do not submit it within that timeframe, their advertising account will be suspended.

The initiative will begin in the United States and then expand globally, taking a few years to complete. To learn more, visit bit.ly/GoogleSpammer.

Jerry S. Heppes Sr. Retires From DHI



HI BOARD OF GOVERNORS announces the retirement of Jerry S. Heppes Sr., CAE, chief executive officer of DHI and the Door Security & Safety Foundation (DSSF), effective October 1. Heppes has chosen to retire from DHI to pursue working in a family business and to consider several consulting opportunities.

"Jerry has served DHI for 26 years as CEO and 33 years in total. He has made many lasting contributions to the success of DHI and DSSF, which have benefited the membership and the entire industry," said DHI President Bill Trimble, AHC. Heppes' career in the association management profession spans more than 30 years. He served as the chair of the Small Business Legislative Council in 2016 and as a board member of the American Society of Association Executives Service Corporation, the Greater Washington Society of Association Executives, and the American Architectural Manufacturers Association.

Starting October 1, Sharon Newport, CAE, DHI chief operating officer, will serve as interim CEO, and a search for a permanent replacement will begin in the first quarter of 2021.

NEWS BRIEFS

Advanced Diagnostics USA has dropped prices on token packs of 10, 25 and 50, representing an average discount of 43% off previous rates. For more information, contact your AD USA distributor or visit www.adusa.us.

ABLOY USA has opened its new U.S. Competence Center, allowing a dedicated team to offer 24/7 tech-



nical expertise and fill orders for ABLOY PROTEC 2 CLIQ locks and key systems and the new ABLOY BEAT, a recently introduced keyless solution that combines a novel digital key, mobile app and an IP68-rated Bluetooth padlock.

Michael Woody, ABLOY Customer Service and CLIQ Competence Center manager, oversees the team of four professionals. Woody, sales engineer Rick Armenta and CLIQ system specialists Edgar Marquez and Jeff McCormick have 80 years of combined experience in security, access control, electronic assemblies and mechanical hardware, IT and software support. **Codelocks Inc.** has appointed Greg Millis as business development manager. Prior to joining the Codelocks team, Millis served as a sales and marketing manager for a mechanical and electronic door and gate security hardware company. In his new role, Millis's responsibilities will include overseeing all gate, fence and OEM distributors, supporting customer relationships and helping to identify new opportunities.

Alex Housten has joined **dormakaba** as chief operating officer for Access Solutions AMER, which includes businesses in the USA, Canada, Mexico and South America and will serve as a member of the dormakaba Group Executive Com-



mittee. Housten is based in the company's Americas headquarters in Indianapolis. He most recently served as vice president and general manager of Carrier's Fire & Security Products Americas business.

Letter to the Editor

WOULD LIKE TO THANK THE MEMBERS OF THE NORTHEAST AREA WHO HAVE elected me the Northeast Director for the last six years. I have now reached the time limit of being re-elected. I ran on the promise of being at GPLA and Yankee every year and have fulfilled that promise. My goal of being on the ALOA Board was to try to make the organization more member-friendly. With the help of the other board members, we have achieved some of that goal. Members may now vote at the annual meeting without being present by voting by proxy.

During my tenure, I have received several honors. The main ones are receiving the ALOA Lifetime Achievement Award and the GPLA Lee Rognon Award. I am very honored to have received these awards. I have also had the very great pleasure of being asked to install the officers of GPLA. I am very happy that I was able to do this.

I have tried during my time to promote all the local organizations that are locksmith-oriented, whether they are ALOA Chapters or not. It is important that these organizations keep contributing to the locksmith field.

While this is the end of my time on the ALOA Board, I plan to still stay active in ALOA and the locksmith field. Again, thank you for this chance to serve you, the members. —Bill Mandlebaum, CML



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PRODUCT BRIEFS

Locinox has introduced the MAMMOTH-HD selfclosing hinge. It provides a new heavy-duty option for gates up to 440 lbs. and 6½ ft. wide. The new hinge set includes the hydraulically dampened MAMMOTH top hinge and the new self-closing RAPTOR bottom hinge.

PACLOCK has unveiled the TL88A trailer couple lock. It features two stainless steel anti-saw pins and can be keyed to nearly every PACLOCK padlock. Machined from solid aluminum, it's made in the U.S.A with global components.

Advanced Diagnostics has released the Mitsubishi 2019 ADS2281 key programming software, which will program both bladed keys and remotes for the Mitsubishi Eclipse Cross. All keys will be erased before programming. An existing programmed key is not required. The company has also announced the ADS2297 Nissan software release, designed to program proximity keys for various Nissan vehicles without online access, NASTF or dealer codes. Additionally available is the ADS2290 GM 2020 software release for Smart Pro, which allows programming for both bladed and proximity keys for several Buick, Cadillac, Chevrolet and GMC models.

ABUS released its latest safety device, the B810 Permit Redbox, created to incorporate permit-to-work procedures and a group lockout box in one unit. Made of powder-coated steel, it features a clear, impact-resistant window that allows workers to easily view permits. It has an enclosed wall bracket and attached handle for stationary or mobile use.



The new Saffire LX Series from **dormakaba** features RFID technology and is designed for multihousing properties. It is available in mortise, deadbolt, interconnect, cylindrical and panic devices and has the option of issuing mobile, fob, wristband or keycard credentials. The product meets UL 10C and ULC S-104 on fire doors rated up to and including three hours. Batteries last up to two years under normal operation

Codelocks Inc. has announced the U.S. launch of two Marine Grade Tubular Mortise Locks (CL510 and CL515). These heavy-duty marine grade mechanical locks are designed to withstand outdoor



and maritime environments. Features include a mortise latch, full-size lever handles and a code-free function with over 2,000 non-sequential code combinations.

Access Tools has released the Essential Long Reach Kit. It includes the Quick Max Long Reach Tool, the Button Master, the One Hand Jack Tool, the Super Air Jack air wedge, the 60" Long Heavy-Duty Carrying Case and the Quick Instructional Manual and videos.



IN MEMORIAM

Jesse Alexander Evans, 35, passed away in April. He had been an ALOA member since 2005 and was a member of the Fox Valley Chapter of ALOA.

Richard M. Lockman, RL, of San Rafael, CA, passed away in August last year. He had been a member since 1958.

Brian Moody, son of past ALOA President Evelyn Wersonick, passed away in April at age 53. A longtime ALOA member, he worked at Vigil's Safe and Key in Albuquerque, NM, and was a talented singer, comedian and artist.

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- 14 5 4 5
- JAPAN
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We Need Your Help

Attention, ALOA Members:

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

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

JUNE

June 18-20 Southern Lock 2020 Trade Show & Learning Expo Hilton St. Petersburg Carillon Park St. Petersburg, FL www.southernlock.com

OCTOBER

October 12-15 Security Leaders Business Conference The Guest House at Graceland Memphis, TN www.aloa.org conventions@aloa.org or (800) 532-2562, ext. 101

October 28-November 1 Yankee Security Convention MassMutual Center Springfield, MA www.yankeesecurity.org



SAVE THE DATE!

October 12-15, 2020 The Guest House at Graceland Memphis, TN

Contact education@aloa.org

Renew Your CFL This Year

OW, WHAT A GREAT CLASS WE HAD AT SAFETECH IN TULSA. Not! Just screwing with you as we enjoy our great vacation where we get to stay at home and work on that "honey do" list. What a great way to relax! This has been the vacation from hell. Please let us go back to work so we can have some

sanity back in our lives.

This year, the following CFL members must renew their CFL certificates:

2019 Expiration — Needs Updating

Name	IAIL Number	Expiration Year	Certification
Bill Boughman	775	2019	CFL-General Forensics
Jeff Lange	259	2019	CFL-General Forensics
Dennis Lyons	347	2019	CFL-General Forensics
Stan Paluski	476	2019	CFL-General Forensics
Ross Squire	387	2019	CFL-General Forensics
			and Automotive
Brian VanDenburgh	614	2019	CFL-General Forensics
			and Automotive

2020 Expiration — Needs Updating This Year

Name	IAIL Number	Expiration Year	Certification
Tom Demont	012	2020	CFL-Architectural Hardware,
			Safes & Vaults, and General
			Forensics
Vern Kelley	415	2020	CFL-Architectural Hardware
Rick Shuford	774	2020	CFL-General Forensics
William Trout	2120	2020	CFL-General Forensics
Tom Ware	273	2020	CFL-General Forensics and
			Safes & Vaults

The above Certified Forensic Locksmiths (CFLs) are required to recertify every three years from the date of their CFL. They are required to submit an updated CV along with payment for each CFL certificate they hold. If they have not worked a case

"IAIL has a high bar for professional conduct and standards."

in the last three years, they are required to submit a mockup of a sample case that we will send them. IAIL has a high bar for professional conduct and standards. The Certified Forensic Locksmith credential is owned by IAIL and can *only* be used by our members who have tested for the right to use the credential. Active membership in IAIL is required by all CFLs as part of their requirement to present and use the credential.

If you have any questions or would like information on IAIL programs, courses and/or CFL certificates, please contact my office. @



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

IAILPresident@aloa.org

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Save the Date for ALOA 2021!

LOA SADLY CANNOT HOLD THE ALOA 2020 CONVENTION IN KANSAS City, MO, due to the prohibitions against large gatherings and other restrictions arising out of the coronavirus pandemic. These restrictions do not allow us to hold the event. See the letter on page 6 of this magazine for more information.

While ALOA 2020 cannot be held, please save the dates July 25–31, 2021, for the ALOA 2021 Convention & Security Expo. Plan to join us at the Caribe Royale in Orlando, FL, for a week of classes, events and access to new products at the Expo. Look for more information in upcoming issues of *Keynotes* and your mailbox.

Please also mark your calendars for SAFETECH 2021 in Reno, NV! Join us April 11–16, 2021 at The Atlantis for the best hands-on instruction in the safe and vault industry, the Swap Meet, Friends of SAVTA Live Auction and all of your other favorite SAFETECH events. You can even book your room now by calling (800) 723-6500 and mentioning "SAVTA" or "SAFETECH."

2020 Security Leaders Business Conference

Be sure to save the dates of October 12–15 so you can attend the 2020 Security Leaders Business Conference at The Guest House at Graceland in Memphis, TN. This popular event is more than a conference. The intimate setting allows you to grow your business knowledge while forging closer relationships with industry leaders and suppliers. Take advantage of special time with manufacturers and distributors, seminars, networking

Save the Date for ALOA 2021 Convention & Security Expo

July 25-31, 2021

Caribe Royale Orlando, FL

events and more. This event isn't just for leaders; it will make you one too.

Business owners, managers and those with business ownership aspirations will all benefit from this event. No matter where you are in your career, business knowledge is essential to personal and business growth!

More information and registration information will be available soon. To learn more, email conventions@aloa.org. @



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Leadership in Crisis Mode

When economic times are tough, your business can survive through planning, triage and hard decisions. **By Noel Flynn**

HIS IS THE TWELFTH ARTICLE IN THE "TOOLS for Managing Your Business" series. We'll discuss how to prepare for and navigate your business through an economic storm. Given the devastating economic impact of the COVID-19 virus, surviving a storm seems like a timely topic. We'll apply a nautical theme to illustrate and drive home some of the key points.

Best to Be Prepared

Sooner or later (although the cause, severity and duration may differ), it's likely that your business will encounter a serious economic storm. If — or more likely *when* — this happens, like a ship's captain at sea, you should be as prepared as possible so you can rapidly take sensible measures that enhance your chance of surviving the tempest.

Why do we have fire drills and evacuation plans? Why do airport firefighters constantly practice, even though their services are rarely required? To be prepared. Yes, the statistical probability of natural disasters is relatively low for your business, and insurance coverage can mitigate your exposure. But other (non-life-threatening) economic threats can be very serious and even devastating to what you have built over a lifetime. So, although you can't entirely insulate your business from disasters, it pays to be as prepared as possible by engaging in solid managerial practices before the storm!

A Whole New Level of Challenge

Those who have been through a serious economic storm before have no doubt that as tough as business ownership and management can be on a daily basis, *these normal challenges pale in comparison to piloting your business vessel though a severe storm*. How exactly does one prepare the business ship for a sudden economic cyclone? Fortunately, even fair-weather business mariners can take some steps to be ready for and keep afloat during rough seas. Not all storms are the same, so we must first assess what type we are facing, but have no doubt that cash will be king under any scenario. Following are just a few real-world examples of business storms.

A few storm scenarios: Your primary customer goes belly up and leaves you holding a large receivable, but you've already incurred all the costs associated with that large project. Or you discover that your angelic church-going trusted bookkeeper of decades ("she was like a family member") has been embezzling from your company since forever, and your cash reserves have evaporated. A new, adverse state or federal regulation irreparably changes your industry's landscape. Or, unthinkable just a few short months ago, what about some crazy virus pandemic threatening the entire globe? This last one is largely the reason I changed my planned topic for this article. Clearly, none of us expected to be confronting such an unprecedented and surreal challenge. While this pandemic is unique, most of the suggestions discussed here will apply to any economic business storm.

Baptism by Fire

In the 1970s, I worked for a Fortune 300, incredibly diversified public conglomerate with more than 200 operating companies. One (of many) that I had an opportunity to do some internal consulting for was a western regional specialty retail chain. Little did I know that in the 1980s, I would suddenly find myself hired as president of a southern regional specialty retail chain. Suffice it to say that when I got a chance to actually look under the hood, all financial statements were absolutely worthless, bodies were buried in unmarked graves everywhere, and virtually everything was completely broken. What comes to mind is, "Other than that, Mrs. Lincoln, what did you think of the play?"

What was even worse is that — for a host of reasons — the extent of this tragedy had only recently and very suddenly come to the attention of the absentee owners and investors. Although retail was never my strong suit —not by a long shot — I was glad to have had at least some prior retail chain experience.

To make a very long, painful, Freddy-Krueger-level nightmare story short, after 28 days — despite quickly administering lots of appropriate corporate CPR — it became my first (but certainly not my last) corporate Chapter 11 bankruptcy experience.

Why is this war story relevant? Frankly, this unbelievably stressful situation was, in retrospect, one of the best learning experiences of my bizarre career. I thought it might be helpful (and timely) to share some thoughts and suggestions in this article. Yes, I did have hair back then, and now you know why it abandoned my head and took up squatter residence in my nose and ears!

Listen to and Heed the Weather Forecast

Let's face it: Some disasters come without much warning, and those are the most difficult to prepare for or deal with. But, I can tell you from experience that economic storms usually could have been predicted, if only the owner had listened to and accepted the weather forecast and mandatory evacuation notice. Yes, of course, it's a metaphor for letting your ego bury your head in your butt!

In previous articles, we've discussed the importance of maintaining meaningful tracking and measuring mechanisms,

reading and understanding your financial statements and having a budget. In a sense, these (and other tools) represent your weather forecast radar. Thus, these business barometers are the signs and signals of how sea-worthy your business vessel is, whether and when a storm is coming and how severe that storm might be.

DABDA – The Stages of Dealing With Death

You may not be familiar with the acronym DABDA, but you've probably heard of the five stages of dealing with death: denial, anger, bargaining, depression and acceptance. Although the intended context is to describe the typical human reaction to impending death, this concept can help us grasp how humans handle other tragedies, such as business economic storms. Notice that denial is the first stage in this process!

Coulda, Shoulda, Woulda

If only the business owner had recognized the threat sooner. If only he/she had not been in denial for so long. If only they would have been willing and able to act expeditiously and decisively. Lots of could have, would have stuff. Over-inflated egos tend to play a primary obstructionist role here! It's really sad to witness such largely self-inflicted paralysis leading to complete failure of the business, when it might have been saved. To be clear, this is not to suggest that the storm could necessarily have been prevented, but rather that the business could have possibly been saved had the owner faced reality and taken appropriate remedial action early in the game.

Declaring Marshal Law at Your Business

In most instances, when the fire alarm rings and it's not a drill or test, the priorities are unmistakably clear: 1) Call 911 and 2) Get yourself and anyone else to safety ASAP. Everything else becomes less important under such circumstances. Similarly, when you or your lookout see the economic iceberg up ahead, it's time for immediate action rather than dialogue. *The absolute need for a sense of urgency cannot be overstated!* The enemy is at our gates, so let's get strapped and take battle stations... *now!*

Man Your Battle Stations

There are several things you can do to deal with a severe economic storm:

- 1. Be as prepared as possible.
- 2. Recognize the threat early.
- 3. Avoid denial.
- 4. Avoid denial (yes, it's intentionally repeated).
- 5. Act quickly and decisively make the tough decisions sooner rather than later.

Stop the Bleeding

Just about everyone knows that in a severe injury case, one of the most important triage actions is to stop the bleeding ASAP. In a business situation, this means maximizing and protecting the cash. Above all else, you *must* stop the cash hemorrhaging immediately. This means putting an MMA-cage-match-type chokehold on the checkbook as well as instituting a sort of martial law (aka "kick ass and take names") mindset. Get it through your head right now that time is of the essence! Think in terms of daily timeframes. Weekly is too long, and monthly is light years away.

Put on your helmet and Kevlar vest and then announce the temporary imposition of internal martial law. Calmly communicate to at least key employees that a severe storm is on the horizon, and it will *not* be business as usual until the sun comes out again. Immediately take control of the cash. Did I mention taking control of the cash? Next, find ways any non-essential assets can be converted to cash, such as returning unneeded inventory. You might only be able to get a credit, but you could use it to purchase stuff that you really need to sell and function as a business.

Next, be sure to invoke emergency measures with collecting your receivables and offer discounts for early or on-time payment, if necessary. Think through this up front so that each of your staff has a script to recite. Sharks can smell blood in the water from far away, so you'll want to be prepared with a plausible explanation when your customers try to sniff out why you are becoming aggressive in your collections. Of course, you don't owe anyone an explanation of why you are trying to more aggressively collect money that is due, but perhaps be prepared with a plausible script when trying to accelerate collections that are not yet due. Look at changing your credit terms to encourage early pay.

Cost Reduction Is Key

It is imperative for owners and managers to embrace the importance of sensibly reducing overhead and operating costs, especially when dealing with an economic storm. Second only perhaps to taking charge of your checkbook, you simply *must* identify and implement sensible cost reductions ASAP anywhere possible throughout your organization.

The natural tendency here is to say, "But we already run a lean ship, so there's not much opportunity to cut costs." Even if that is generally true, a lean operation during normal times is vastly different from what is required during a serious economic storm. So, take a second and third look at your operating costs and purchases. Here's your new mantra: "Eliminate, reduce or "Put on your helmet and Kevlar vest and then announce the temporary imposition of internal martial law. Calmly communicate to at least key employees that a severe storm is on the horizon and this will not be business as usual until the sun comes out again."

convert to cash." Although equipped with lots of relevant business management experience, until my experience with trying to save troubled companies, I was somewhat naïve about how lean a business could operate while in survival mode. I am reminded of the quote "The future is now!"

Zero-Based Budgeting

You can look up official definitions, but if you are not familiar with zero-based budgeting, this essentially means that absolutely nothing is presumed to be essential until justified. In other words, there are no sacred cows in our spending analysis. Imagine the company beginning anew with a blank piece of paper. Try building the 2.0 version of your business from the bottom up. Get your big boy pants on for this one, because it's not about choosing between good and bad decisions — it's about survival, and many decisions are likely to be choosing the lesser of two evils. Play with the numbers by starting with a revenue/income stream level that you are confident is sustainable, and then see how much cost you can afford to at least break even. Don't forget that you will need a positive cash flow.

Understand Your Break-Even Point

This is a good time to pause and reflect upon the cost structure of your company and how vulnerable your business may be. Your company's breakeven point is essentially the point at which your business generates neither a profit nor a loss. It's all about the relationship of your income to your expenses, which



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can usually be grouped into fixed and variable categories. The fixed kind — as the name would suggest — tend to not change with fluctuations in sales volume, whereas the variable kind tend to react to changes in sales volume. You *must* drastically reduce your break-even point!

You might recall from a previous article that after your cost of sales (costs associated directly with your sales and/or repairs or installations) is subtracted from your income, what remains is your gross profit. You should strive for a 40% gross margin or higher. So, you need to generate sufficient gross profit to cover all of those indirect expenses, including overhead such as rent, insurance, operating expenses, etc. If you can eliminate a cost entirely, that's even better. OK. Let's get back on track.

Lines of Credit

Obviously, if you have an unused balance on your credit line(s), this could be enormously helpful. Likewise, if you have access to a line of credit that could be secured by some combination of receivables and/or inventory or real property, this should be explored. If you own a building, you could perhaps take a mort-gage or refinance an existing mortgage. You might possibly be able to sublet some extra space in your building if permitted under the terms of your lease. Do you *really* need a building at all, or could you reformat to a mobile business model? Don't forget your revolving credit, i.e. credit cards.

Factoring Your Receivables

If securing a line of credit from a bank is not a viable option for your business, then factoring might be for you. If you have one or more large collectable receivables (such as government or a large stable company) you could consider factoring those receivables. If you're unfamiliar with the term, factoring has been around since forever and essentially involves getting cash now for your future receivable. Yes, of course, you will take a haircut (discount plus fees), which is what the factor charges for their service. Sorry, I hate to be the one to break the news, but Santa is under a stay-at-home quarantine and has applied for a government bailout. Factoring paperwork can be annoying, but this could save your butt.

Working With Suppliers and Other Business Partners

Although ostensibly appealing, think before you jump into new relationships. You should skillfully exhaust all reasonable possibilities to reduce your costs (and possibly enhance credit and relax payment terms) with your existing suppliers and partners, especially those you have a solid working relationship with. "Sorry, I hate to be the one to break the news, but Santa is under a stay-at-home quarantine and has applied for a government bailout."

However, you may find this to be an either/or proposition. In other words, suppliers may not be receptive to both price reduction and also more favorable credit limits or payment terms.

Payment Plans and Promises

In business, there are fundamentally two credit issues: *whether* I will get paid and *when* will I get paid. I've learned over the years that a surprising number of suppliers will try to work with you in times of trouble when you can't pay your bills on time. A common solution is to establish payment plans wherein you can spread out your debt obligations by making payments. Suppliers want to avoid digging the hole any deeper!

My best advice here is: 1) Communicate with your suppliers and be realistic about your commitments in terms of making payments. 2) Keep your promises and *make your plan payments on time*.

However, if it becomes clear that you won't be able to make a payment on time, call the supplier (don't email or fax), tell them in advance that you will be late and provide a *realistic*, *rock-solid new date for making the payment*. At least make a partial payment to show good faith. At the end of the day, it's all about credibility. Without suppliers, you're done!

I can't over-emphasize the importance of maintaining credibility by keeping your payment plan promises. A great way to exude confidence is to *under promise and over deliver*. This can be the key to continuing to have access to essential materials on a credit basis. Many strong relationships have developed from adversity, and many suppliers can relate to your pain.

Bankruptcy as a Strategy

Sometimes, owners are willing but simply unable to deal with a severe storm without external assistance. Unfortunately, far too often, by the time owners agree to seek qualified help, the cancer has metastasized, and all that's left to do is make the final arrangements. Under certain circumstances, filing a pe-





tition for bankruptcy protection can be an effective strategy. This topic is far beyond the scope of our discussion, but you should be aware of this option and how it works mechanically. Following is a sort of "Bankruptcy for Dummies" type of primer that is certainly not intended to be legal advice.

Essentially, the business files a petition for bankruptcy usually chapter 11 (reorganization) or chapter 7 (liquidation) protection from creditors. It's as if a giant steel curtain suddenly comes down and creates a virtual Berlin Wall between the past and future, wherein the past becomes known as "pre-petition" and the future known as "post-petition." The petitioner entity (your company) becomes known as "debtor-in-possession" (DIP), and debts incurred pre-petition are suspended, generally speaking. Here's a very important point: The petitioner (DIP) is not permitted to pay pre-petition debts (without the court's permission) even if he wants to and has the funds to do so. There's also a look-back window where the court can review your behavior for months prior to your filing.

Post-petition, armed with a new debtor in possession checkbook, the company's life begins anew and is renamed The Phoenix (just kidding). This introduces a complicated situation wherein your company is likely asking suppliers to hope to get paid some of the money you owe them from the past while either extending a new credit line or transacting in a new cash-ondemand (COD) relationship. The petitioner files a reorganization plan with the court and — if acceptable to the creditors and judge — the company can potentially and eventually emerge from the ashes. One of the advantages for the petitioner is that the court can set aside any contractual obligations! But, let's be clear: You need to pay any new debts incurred while your status is "debtor in possession."

If the chapter 11 approach fails, the company will likely crash and burn, and the petition will convert (voluntarily or otherwise) into a chapter 7 liquidation. This means that all assets will be sold and proceeds distributed to creditors: *secured* creditors first (such as a mortgage holding bank, said to be in a "first position") and then *unsecured* creditors, if any scraps remain on the carcass. Often, all that's left for the unsecured creditors is a bad memory. It reminds me of a show on the Discovery channel that featured a Serengeti wildebeest killed by a pride of lions then finished by hyenas and vultures.

Bankruptcy law tends to be a highly specialized area of practice, and you should certainly seek competent legal advice if considering it. Pop quiz: Did you know that less than 10% of business bankruptcy chapter 11s (reorganization) are successful? One of the reasons is that a large percentage of business chapter 11 petitions are actually chapter 7s (liquidation) in disguise, with no real hope of emerging successfully. Now that you know enough about bankruptcy to be dangerous, let's move on.

Selling Your Way Out of the Storm

Let's stipulate up front that we are all amateurs at the art of double speak compared to our elected officials. With that in mind, following is some double talk about selling your way out of the storm (now is a good time to spray that new B.S. repellant that you bought on Amazon). Get ready; here it comes.

You need to be more aware than ever that, generally speaking, maintaining sales during an economic storm is certainly important, but here's the catch: Sales maintenance — and even more so, sales growth — consume cash. However, if you don't have sufficient income, the fat lady will surely sing, and the game is over. How are we supposed to juggle and balance this apparent paradox? Notice that I said "paradox" rather than risking offending anyone by saying "oxymoron."

First, take a close case-by-case look at recurring business and *pay special attention to both profitability and payment terms* —

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Figure 1. A dashboard can be a good forecasting tool. You can download the full Excel file on the ALOA Tech Link app.

and of course, customers' actual payment practices. If a chunk of business is sufficiently profitable and otherwise desirable but payment terms and/or practices are unfavorable, you may be able to accelerate collections by offering early pay discounts or incentives. As mentioned, factoring certain receivables may be a solution, where appropriate.

As counterintuitive as it may seem, there may be certain pieces of your business that you are better off amputating. Take a really close look at any business segment that requires dedicated personnel and/or equipment or that may be a drag on your business. You can reconstruct your P&L to play "what if" simulations to evaluate segment dumping.

Forecasting

One of the more important actions both before and after the storm is forecasting. Before the storm, forecasting represents

your radar (business barometers) and is all about watching for the early signs that a storm is coming and, ideally, suggesting its severity and duration. After the storm, forecasting takes on a more granular characterization, focusing on cash flow and the primary elements that drive it. You need a weekly cash flow forecast rolling calendar (expected cash in, cash out and the cash on hand balance) reaching out one month and for the first week, *you should be forecasting daily*.

One very effective radar tool for any time, especially when forecasting an impending storm, is a dashboard. Just like the gauges in your car (gas, temperature, RPMs and the dreaded check engine light), you need a snapshot of the vital signs of your business. Although there isn't an exact prescribed format, *Figure 1* is a reasonable representation of a generic dashboard template.

If you wish to use the actual spreadsheet template in *Figure 1*, log on to the ALOA Tech Link app and look for this

article there. There will be a link where you can download the spreadsheet.

In the *Figure 1* Excel spreadsheet file, each column heading includes a mouse-over flag note explaining what should be listed in that column. Some columns list a new total every day that replaces the previous daily total. Other columns feature a stand-alone new daily number. Each day is incremental and will be combined with other days at the bottom of that column in the model. Input cells are in a blue font, and formulas and headings are in black. Only two days of data have been illustrated. For any days without activity (such as Sundays), the row should be left blank. In other words, day five of the template should reflect and coincide with the fifth day of the calendar month being tracked, irrespective of whether there was any business activity that day.

941 Payroll Trust Funds

When I took over managing that troubled retail chain, one of the many ugly discoveries was that they had not been paying (depositing) their payroll trust funds. In other words, they had been using the payroll withholdings (known as 941s) to enhance the company's cash flow. In business, there are ordinary mistakes, and then there are catastrophic mistakes. Not depositing 941 trust funds in a timely manner is an absolutely huge mistake to avoid at all costs. As Mr. Rodriguez (IRS agent in charge) said to me, "I know you were not the one who caused this mess, but I am required to put you through this process."

You need to be very aware that 941 is the *only* section of the U.S. tax code that carries penalties up to 100%. That's right: up to 100%, and it could potentially lead to an all-expenses-paid vacation (no, not a Carnival Cruise... try again) in a small room with bars and lots of lonely eHarmony candidates with face tattoos. As the responsible manager, you can also find yourself having a delightful chat with the criminal division of the IRS and reviewing much of your personal financial information while involuntarily auditioning for a part on *Law and Order*. It's probably also a good idea to add the "Bad Boys" theme song from the *Cops* TV show to your playlist on your phone. OK, sure, if it helps, you can also add "Looking for Love in All the Wrong Places" from *Urban Cowboy* too!

Conclusion

Dealing with economic business storms is no laughing matter. So, on a more serious note, I sincerely hope that at least some of the information discussed here will be of value and assistance to you, especially if you are among those who find themselves preparing for or navigating through their first major economic storm. Take a deep breath, manage your emotions, try to keep your sense of humor, avail of any government assistance programs and act like the captain of a ship at sea in a bad storm. Although you may feel scared and helpless at times, it is likely that you can take some meaningful steps to at least improve the situation. Good luck, best wishes, stay safe and let's hope that we can all return to some semblance of normal before too long.

In our next article in this series, we will discuss the role, content and issues associated with an employee handbook.



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not-for-profit and for-profit companies in numerous industries worldwide. This includes being an ALOA board member since 2011, and he is also an ACE instructor, developing and teaching business management.



Andrew Taylor walks you through replacing the housing on a 2014 Chevy Silverado.

RECEIVED A CALL STATING THAT THE KEY WOULDN'T TURN ON A SILVERADO, and it would be another small detour from my standard automotive locksmithing day. The first thoughts in your head combine thoughts of a worn/ bad key or tumblers, a steering wheel locked tight and jamming things, etc. So I quoted a ballpark figure and headed on out.

Of course, the first thing you should do when you get there is try it yourself, because maybe the customer is simply doing something wrong. The funny thing was, the key did turn just a bit, but not very far. So now you might be thinking, "Okay, the tumblers must be lining up, or it wouldn't turn at all." Well, you're right!

There's a fun plastic gear inside the housing that turns the plastic gear on the ignition switch when you turn the key, and there's a tiny piece of pot metal inside the housing that can break off and jam the gears. This is your chance to take a slight detour that won't have you sweating: Replace the housing. Of course, you probably don't have one on your truck, so a quick trip to the Chevy dealer might be in order. Most of them even have it in stock.

The steps below show that it's a fairly easy job to add to your repertoire. With just a couple screwdrivers, a lock plate depressor and about an hour on your first try, you've saved the day.

Never forget, safety first: Unhook the battery. You're playing with an airbag!



Figure 1. The two hooks on the steering wheel that hold the airbag are circled.



Figure 2. Here, you can see the wire on the airbag that hooks into the steering wheel.



Figure 3. The view through the inspection mirror shows why it's much easier to remove the covers first to pop the airbag off (unless you have a specially bent tool).



Figure 4. Lift the brown tabs to unplug the airbag connectors. Don't worry; they are color-coded and only go back in one way.

The Steps

The airbag is held to the steering wheel by a spring wire that clips under two hooks (see *Figures 1* and 2). You reach them by prying it from the back side through a hole toward the center of the wheel with a flat-tip screwdriver on both sides. I find it much easier to do if I pop the column covers off first to provide space and use an inspection mirror



Figure 5. The airbag clock spring is held in place by a Truarc ring.

to see what I'm doing. The covers have no screws — only clips — so they come off easily after popping off the tilt wheel lever (*Figure 3*). Once you have it out, lift the brown tabs and unplug the airbag (*Figure 4*).

Next, remove the ¹³/₁₆" nut and unplug the accessories plug to pull off the steering wheel. No puller is needed for this generation, so just pull it off.



Figure 6. Use the lock plate depressor to remove the clip holding the lock plate in place.

The airbag clock spring is held down by a Truarc ring (*Figure 5*) and slides onto two posts to keep it from spinning. Underneath is the lock plate, held by that fun clip they have used since the days of the Saginaw column.

You'll notice now that the turn signal switch just barely blocks the housing from coming off. Two Torx T25 screws





Figures 7 and 8. Two screws hold the turn signal switch.



Figures 9 and 10. Three T30 screws hold the housing to the column. Two are shown in these images.





Figure 11. The third T30 screw is back on the side in a spot that's not easy to notice at first.



Figure 12. Two clips hold the ignition switch in the housing. One is shown here.

"Never forget, safety first: Unhook the battery. You're playing with an airbag!"

(*Figures 7* and 8) will get that out of the way so you can then remove the three T30 screws that hold the housing on (*Figures 9-11*).

The ignition switch has two springloaded clips preventing it from sliding out of the bottom of the housing (*Figure* 12). Use a pocket screwdriver to push them in to get the switch out of the way. Then you have two T15 screws holding the immobilizer module (*Figures 14* and 15) and the snap-in transmission safety interlock cable (*Figure 13*).

At this point, you can hold the housing upside down to get that piece to fall away from the gear and convince the cylinder to turn to the on position, or use your green IRT tool to remove it while it's still off. After that, slide the immobilizer ring off, start putting everything on the new housing and reassemble. I found it easier to snap the covers on before putting the steering wheel on (*Figure 16*). \circledast



Andrew Taylor, 57, has been locksmithing since 1983 and self employed since 1989. He originally apprenticed under Tom Sprouse in New Jersey and is owner of Tay-

lor Locksmith in Virginia Beach. He does commercial, residential and automotive work but prefers automotive for the variety.



Figure 13. The transmission safety interlock cable clips in here.





Figures 14 and 15. The immobilizer module is mounted by T15 screws.



Figure 16. Almost done! Snap the covers on while the wheel is out of the way.

Rekeying a SUBARU IGNITION LOCK

Ed Woods, CML, CPS, CAL, takes you through this job for a dealer client.



OT UNLIKE MANY HONDA FOUR-TRACK LOCKS, THE SUBARU HIGHsecurity-style locks seem to fail at a higher rate than their conventional locks. By design, external four-track locks are not as rugged as the internal two-track locks. Consequently, I find myself rekeying quite a few of these locks for dealerships.



Figure 1. The locks come random-keyed from Subaru, and the dealer wants them to be rekeyed to the vehicle original key so that the customer still has one-key convenience.



Figure 2. The customers in this case had a remote-head key and a valet key for their vehicle, while the lock supplied by Subaru had two basic transponder keys.



Figure 3. The first action is to remove the antenna ring from the lock, being careful not to break it.



Figure 4. Once the antenna ring is off, you will see two roll pins on opposite sides of the lock.



Figure 5. Next, remove the two screws holding the key buzzer switch in place.



Figure 6. I purchased some #2-56 x 5/8 self-tapping screws from a local Fastenal branch.



Figure 7. I then inserted them about three revolutions into the roll pins.

ELECTRIFY. RETRACT. CONTROL.

SDC's Quiet DUO™ LR100 Series **Electric Latch Retraction Kit** retrofits most brands* of mechanical exit devices.

The SDC LR100 Series Electric Latch Retraction Kit enables electric access control and dogging of mechanical exit devices. When energized the motor retracts the exit device latch and pulls the pushpad on most devices into the dogged (depressed) position enabling momentary or sustained push and pull operation of the door.

* QUIET DUO™ LR100 Series available for these brands:

Security Door Control

Adams Rite	• IDC	• PHI
Arrow	 Jackson 	 Sargent
 Corbin Russwin 	• K2	• SDC
Dor-O-Matic	Kawneer	 TownSteel
Falcon	Marks	Von Duprin
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www.sdcsecurity.com/LR100Kit

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SDCSecurity.com • 800.413.8783	



cantilever the roll pin out of the blind hole.



Figure 10. This hardened faceplate slides off of the cylinder, allowing the plug to be removed from its shell. If the spring does not want to stay in place in the back of the plug, a little grease will make it stay where it needs to be during reassembly.



Figure 9. Now, just set them aside for reinstallation.



Figure 11. Once you get the cylinder out, the plug just pushes out the back. As you can see, all the tumblers/wafers are aluminum.



Figure 12. ASP makes a keying kit A-29-101 for Subaru highsecurity locks.



Figure 13. The aluminum tumblers are out, and the brass ones are in to match the customer's original key.

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Figures 14 and 15. Reassemble the plug back in the shell and insert it back into the housing, being careful not to damage the key buzzer actuator.



Figure 16. Reinstall the key buzzer, roll pins and antenna ring to complete the job. All that's left is the paperwork, as the Subaru mechanics install it on the column.

"By design, external fourtrack locks are not as rugged as the internal twotrack locks."



Ed Woods is the senior locksmith and company trainer at Lockout Express LLC. He's also an instructor for Just Cars, ALOA and several distributors.

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SCAN TO WATCH





Ed Woods, CML, CPS, CAL, gets to work on a surprising brand of motorcycle.



Figures 1 and 2. "I got two Husqvarnas, and they only have an on/off switch." That's right. How was I to know that, in 1903, Husqvarna started making motorcycles in Sweden? I pulled out my *Fast Facts*, and sure enough: There is a TR650. After a little research, I found that it is equipped with an ignition immobilizer too.


Figures 3 and 4. When we called the customer back, he insisted that all I had to do was make a key to turn the locks, and he would do the rest. Well, I'm OK with that. I headed to the bike.



Figure 5. There are three locks on this bike. The first is the ignition, which has a double-sided lock with three tumblers in each direction.





Figures 6 and 7. The other two locks are the gas cap and seat cap, both of which have all tumblers on one side of the lock.

Buell		Blast				00	+ BU01
1200 Cl G-Keys ITL# Gauge	DSD# shidr	cod Bax	HPC ed 14-05-026		7	! ∉	×270
same co No code diss. ga	N/A ,110 ks, Italy KEY ode series us es found, Rea s cap. (Also: acode to ma	N/A 0 3 WAY: ZD24RI ed on many Z d, impression Husqvarna)	N/A .0255 DP = ZD23RCP adi keys	S&D .146 .256 .366 .476 .587 .697	0123456789	- .301 .276 .250 .224	IIco 2D23RDP EZ TMC1 Tay X270 B&S JET# TMC1 Bör Curt SIL ZD24RDP P gas 123456 I gas 123456 N heli 123456

Figure 8. I broke out *Fast Facts* and turned to Plate BU01 to get the specifications for cutting my key.



Figure 9. Not having a code card for this key, I got out micrometer card #58 to cut the key.





Figure 10. I grabbed my scope and took a shot at the gas cap, which turned on the first try. It was not perfect, but as long as it opened, then I could refine the key. I did not want to be guessing, so I took out my trusty Sharpie and marked all the pieces down one side.





Figures 11 and 12. I pushed down on the center section of the cap and relieved the spring pressure on the pin, which I removed.

"How was I to know that, in 1903, Husqvarna started making motorcycles in Sweden?"



Figure 16. I cut the opposite side of the key the same way and tested it in the ignition and seat lock. The helmet trunk on the back was an aftermarket unit, and the key did not fit it. The customer was removing it from the bike, as he was going to do motocross/enduro racing with it. I wished him luck on getting it running and collected my money, and then I was back on the road for more adventures.



Ed Woods, CML, CPS, CAL, is the senior locksmith and company trainer at Lockout Express LLC. He's also an instructor for Just Cars, ALOA and

several distributors.



Figures 13 and 14. Now all I had to do was insert a blank TMC1/X270, read the cuts and cut my key.

36



Figure 15. I reassembled everything using a socket on a nut driver and an awl to line it up to insert the pin back and hold it all together.



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CREATING PINNING CHARTS

In this fourth installment, **Tyler Thomas** covers charts for Corbin Russwin Access 3 LFICs.

N MY LAST THREE ARTICLES, I SHOWED YOU HOW TO CREATE PINNING charts for SFICs, Sargent 6300s and Sargent Degree LFICs in seconds using a method that is not known by many. In this article, I will apply that method to Corbin Russwin Access 3 large format interchangeable cores (LFICs).

The Corbin Russwin Access 3 platform comprises three levels:

- AP, which is a patented keyway that uses conical pins.
- AS, which is a patented keyway that uses angled pins that interface with a sidebar.
- AHS, which is AS with a UL437 certification.

The method in this article will work exactly the same on all three levels. The only difference is that with AS and AHS, you must transpose angles onto the pinning chart; AP will simply be numbers. Other than that, it's the same math, rules and process.

As was the case with SFICs and Sargent 6300s, traditional methods of creating a pinning chart for the Corbin Russwin Access 3 require an unnecessarily robust

formula for calculating the build-up pin. This formula, like SFICs and Sargent 6300s, requires three calculations:

- 1. Add your bottom and, if applicable, master pin(s) to create a plug total.
- 2. Add 6 to your control key cut to create a "control number."
- 3. Subtract the plug total from your control number to derive your build-up pin.

It's worth mentioning that while the Sargent Degree and Corbin Russwin

Access 3 are almost identical, there is one very important difference: Corbin Russwin Access 3 AS/AHS LFICs *are* able to use angle bottom pins in the 6th chamber. If you recall from my last article, Sargent Degree DG2/DG3 LFICs must use conical bottom pins in the 6th chamber due to spacing limitations. Corbin Russwin Access 3 LFICs do not have these limitations. If you plan on servicing both platforms, commit these requirements to memory from the start to avoid core failure!

The Method

I'm going to discuss the method while providing an example. *Figure 1* shows a basic Corbin Russwin Access 3 LFIC pinning chart. I have these pinning charts available for free at LockReference.com. Print as many as you'd like to keep on hand. We will use one of these charts to demonstrate the method. Like Sargent Degree, Corbin Russwin Access 3 LFICs only use a control lug in the 3rd and 4th chambers, which is why the build-up pin boxes are blacked out in the other, noncontrol chambers.

Figure 2 shows the bittings we will be working with to construct a pinning chart. To help make things easier to view, I have marked the depths in black and the angles in red.

Step 1: Determine Bottom and Master Pins (if applicable)

Step 1 uses the same rules as rekeying conventional cylinders. If the core is not master keyed, then your bottom pins will mirror the change key's bittings. If the core is master keyed, then each bottom pin is determined by the shallowest operating cut in that chamber, and the master pin is determined by the deepest cut minus the shallowest operating cut for that same chamber.

1. TOP PIN				1		
2. BUILD-UP PIN						
3. MASTER PIN (if applicable)				N. H		
4. BOTTOM PIN/ANGLE	/	/	/	/	/	

Figure 1. This is a basic Corbin Russwin Access 3 LFIC pinning chart.

TOP MASTER KEY BITTING/ANGLE	1 C 5 R 2 L 6 C 3 L 2 L
OPERATING/CHANGE KEY BITTING/ANGLE	3 C 1 R 4 L 3 C 1 L 5 L
	1 C 5 R 5 L 4 C 3 L 2 L

Figure 2. The bittings are shown. The depths are marked in black, and the angles are in red.



Figure 3. The bottom and master pins have been determined.

1. TOP PIN	7	5			7	5
2. BUILD-UP PIN	Dee		-0	24		
3. MASTER PIN (if applicable)	2	4	2	3	2	3
4. BOTTOM PIN/ANGLE	1/0	1/R	2/L	3/0	1/1	2/1

Figure 4. Non-control chambers have a uniform stack height of 10. Control chambers have a uniform stack height of 13.

As our core is master keyed, we will use conventional master keying rules to determine our bottom and master pins. As a reminder, AS/AHS cores must carry the angles of the operating key(s), so those angles must be transposed at this point as well. *Figure 3* shows us our results thus far.

Step 2: Determine Top Pins

Like SFICs and Sargent 6300s, Corbin Russwin Access 3 LFICs use uniform stack heights for each chamber. Unlike SFICs, those uniform stack heights are not the same throughout the core. Non-control chambers have a uniform stack height of 10. Control chambers have a uniform stack height of 13. Since we know two of the three values for the non-control chambers so far (that is, the bottom and master pins), we can simply subtract those values from 10 to determine our top pin for each of those chambers. Our results are seen in *Figure 4*.

1. TOP PIN	7	5	2	3	7	5
2. BUILD-UP PIN				1		
3. MASTER PIN (If applicable)	2	4	2	3	2	3
4. BOTTOM PIN/ANGLE	1/0	1/R	2/1	3/0	1/1	2/1

Figure 5. Results have been determined through the top pins.

1. TOP PIN	7	5	2	3	7	5
2. BUILD-UP PIN						
3. MASTER PIN (if applicable)	2	4	2	3	2	3
4. BOTTOM PIN/ANGLE	1/0	1/R	2/L	3/0	1/1	2/1
PIN STACK TOTAL	10	10	6	9	10	10

Figure 6. The non-control chambers' pin stack totals are in green. The control chambers' pin stack totals are in blue.

CONSTANT STACK HEIGHT	10	10	13	13	10	10
PIN STACK TOTAL	10	10	6	9	10	10
Build-up Pin	-	-	7	4	-	-

Figure 7. The control chamber totals have been subtracted from 13, and the result — which is the build-up pin — is shown.

1. TOP PIN	7	5	2	3	7	5
2. BUILD-UP PIN			7	4		
3. MASTER PIN (if applicable)	2	4	2	3	2	3
4. BOTTOM PIN/ANGLE	1/0	1/R	2/L	3/0	1/1	2/1

Figure 8. The build-up pin values have been added to our pinning chart, which is now complete.

1. TOP PIN	7	5	2	3	7	5
2. BUILD-UP PIN			7	4		
3. MASTER PIN (if applicable)	2	4	2	3	2	3
4. BOTTOM PIN/ANGLE	1/0	1/R	2/1	3/6	1/1	2/1
PIN STACK TOTAL	10	10	13	13	10	10

Figure 9. Verify that the sum of all pin segments equal their appropriate constant stack height

Determining the top pins for the control chambers of Corbin Russwin Access 3 LFICs is just as simple, thanks to the following formula:

Top Pin = 7 - Control Key Bitting

This formula can be arranged to ascertain a control key's bitting, which is helpful when decoding:

Control Key Bitting = 7 - Top Pin

Using this formula, we can quickly run through the top pin increments of the control chambers. We simply have to subtract the control key bitting from 7 for each respective chamber. The control key bitting in chamber 3 (the chamber third-closest to the shoulder) is 5. 7 – 5 gives us 2, which will be our top pin for the third chamber. The control key bitting in chamber 4 (the chamber fourth closest to the shoulder) is 4. 7 – 4 gives us 3, which will be our top pin for the fourth chamber. Since we only have two control chambers, we are done. The results are shown in *Figure 5*.

Step 3: Determine Build-Up Pins

All that is left is to determine the build-up pins for our two control chambers. Since we have determined the bottom, master and top pins, then we have three of the four pin segments required to combinate each chamber. If we were dealing with cores using only a change key, then we would have two of the three pin segments required to combinate each chamber. Either way, we are missing only one piece of information: the build-up pin.

As previously mentioned, control chambers have a uniform stack height of 13. That is, when all pin segments are added, their numeric value will equal 13. Since we are missing only the build-up

"Control chambers have a uniform stack height of 13."

pin value, we can add all known values (Bottom Pin + Master Pin + Top Pin for master keyed cores or Bottom Pin + Top Pin for non-master keyed cores) and subtract it from 13. Our formulas would be:

Master Keyed: 13 – (Bottom Pin + Master Pin + Top Pin) = Build-Up Pin

Not Master Keyed: 13 – (Bottom Pin + Top Pin) = Build-Up Pin

I have broken this process down into smaller steps to demonstrate this part of the method. In reality, you won't need to do this except for maybe your first few times. Pretty soon, you'll be able to do all of this math mentally and only need to transpose the results to your chart.

Nevertheless, in *Figure 6*, I have added the pin stack totals of all chambers thus far. The non-control chambers, which we have already completed, have their pin stack totals represented in green. The control chambers, which we are in the process of completing, have their pin stack totals (up to this point) in blue. *Figure 7* shows control chamber totals subtracted from 13 and the result, which is the build-up pin. *Figure 8* shows the build-up pin values added to our pinning chart, which is now complete.

If you would like to check your work until you get comfortable with this method, I would advise you to verify that the sum of all pin segments equal their appropriate constant stack height (*Figure 9*).

TOP MASTER KEY BITTING/ANGLE	3 C 1 R 1 L 5 C 6 L 5 1
OPERATING/CHANGE KEY BITTING/ANGLE	2 C 4 R 6 L 4 C 2 L 1 1
	1 1 1 1 1 1
CONTROL KEY BITTING/ANGLE	3 C 1 R 4 L 2 C 6 L 5 1

Figure 10. Use these bittings to create your own chart.

1. TOP PIN						
2. BUILD-UP PIN			-			
3. MASTER PIN (if applicable)	1	3	5	1	4	4
4. BOTTOM PIN/ANGLE	2/0	1/R	1/1	4/0	2/1	1/1

Figure 11. These should be your results after Step 1.

1. TOP PIN	7	6	3	5	4	5
2. BUILD-UP PIN						
3. MASTER PIN (if applicable)	1	3	5	1	4	4
4. BOTTOM PIN/ANGLE	2/0	1/R	1/1	4/0	2/1	1/1

Figure 12. These should be your results after Step 2.

1. TOP PIN	7	6	3	5	4	5
2. BUILD-UP PIN	Strand.		4	3		
3. MASTER PIN (if applicable)	1	3	5	1	4	4
4. BOTTOM PIN/ANGLE	2/0	1/R	1/1	4/0	2/L	1/1

Figure 13. This should be your completed pinning chart.

Example #2

Let's go through one more example. This time, try to construct the pinning chart on your own. *Figure 10* shows our new bittings. *Figure 11* should be your results after Step 1. *Figure 12* should be your results after Step 2. *Figure 13* should be your results after Step 3 and, thus, your completed pinning chart.

Conclusion

Just like last time with Sargent Degree and before that with Sargent 6300s and SFICs, it's that easy: three steps and two simple formulas. I hope you enjoyed this series of articles. Interchangeable cores can be daunting at first, but — as this series has shown — the math and pinning requirements aren't that complicated. With a bit of practice and experience, you'll be well versed in the knowledge and confident to take on any servicing jobs for small format, Sargent 6300, Sargent Degree and Corbin Russwin Access 3 cores. @



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KARA POWERPLEX 2000 SERIES Part 8

In this eighth and final installment, **Sal Dulcamoro** covers troubleshooting.

> ²M FINALLY DOWN TO THE LAST PART OF THIS ARTICLE SERIES, COVERING troubleshooting the PowerPlex. Before I get to that, I want to explain the process of a hard reset.

I previously explained that for programming, the default setting requires four-digit access codes, but codes can range from four to eight digits. Once you choose the access code length, you cannot suddenly choose an access code of a different length, as they must all be the same length. If you choose four digits, all access codes must have four digits. You can't have some four-digit codes, some five, some six or any other combination of lengths. If you decide to change the length of your access codes (or a few other lock configurations), you must do a hard reset to bring the lock back to factory default settings. A hard reset of a PowerPlex lock is accomplished in one of two ways, depending on whether or not you know the master code.

First, you need to know the location of the reset button. If you look at the back of the lock body (see *Figure 1*), you can see a printed label in the top right corner that says "A4 RESET." It's not clear just by looking at the labeled lock body where the reset button is. It is actually deep within the mounting post on the top right side, from this viewpoint. To engage the button, you will need a long, narrow tool to go deep into



Figure 1. The reset button is deep within the mounting post on the top right side.



Figure 2. To engage the reset button, you need a long, narrow, nonmetallic tool like these modified chopsticks.

the mounting post. This tool cannot be metallic. I modified a set of wooden chopsticks to be narrower (*Figure 2*) because they were too wide to enter the opening.

I am pointing to the post that contains the reset button in *Figure 3*. Make sure your tool can go deep enough to push down the reset button (*Figure 4*), which can be pushed while the lock is off the door or still attached.

Accessing the reset button while the lock is still on the door isn't difficult; it's just a bit trickier. As you can see from the inside view, there are three mounting screws: two on top and one at the bottom. From this view, we can't see the inside surface of the lock body. We know that this inner handle assembly attaches to the main lock body through the three internally threaded mounting posts: two on top and one on the bottom.

The only thing obstructing access to the reset button is the mounting screw on the top right side, which I removed (*Figure 5*). I inserted the same modified chopstick through the mounting screw hole (*Figure 6*) and pressed inward. You can make any similar tool as long as it is long enough and non-metallic. After resetting, reattach the screw and



Figure 3. The author is pointing to the post that contains the reset button.



Figure 4. Make sure your tool can go deep enough to push down the reset button.



Figure 5. The only thing obstructing access to the reset button is the mounting screw on the top right side.

reprogram the lock. Now I will describe a full hard reset with or without knowing the master code.

Hard Reset When the Master Code Is Known

 On the inside of the back housing, remove the top right screw holding the lock to the door.



Figure 6. The author inserted a modified chopstick through the mounting screw hole and pressed inward.

- 2. Pump the handle until you get a green LED. Insert a long, non-metallic, bluntended tool in the screw hole to press and hold the reset-to-factory-default button.
- 3. You have up to five seconds to push "#" and release the reset button. If you don't, the lock continues its normal operation. As soon as the "#" is pressed,



Figure 7. The author has found that the inside handle sometimes breaks off.



Figures 8 and 9. The handle is separated from the spindle that actuates the lock from the inside of the door. A closer view (*Figure 9*) shows how the handle breaks off because it is cast and not forged or machined.



Figure 10. The author removed the mounting screws and the inside handle assembly.

the lock exits the current state. If timeout is reached or if any other key is pressed after #, the lock exits the sequence and stays in access state. If # is pushed and the reset button is released within the five-second period, the lock goes in reset sequence state and the lock displays the "reset sequence in



Figure 11. The plate with the actuating part and spring are on the floor in pieces.

progress" message by a flashing green and red LED light alternately once every second.

4. In this state, users have 20 seconds to enter the master code plus # to perform a hard reset. If a bad master code is keyed in, the lock exits the reset sequence state and goes back into access



Figure 12. The snap ring that connected the handle to that part is shown hanging over the spindle.

state. If the correct master code is entered within 20 seconds, the lock performs a hard reset and goes back into the unprogrammed state. When an incorrect master code is entered, the tamper count decrements. After four unsuccessful attempts to reset the lock with a bad master code, the lock goes into the tamper shutdown state for 30 seconds and then resumes normal operations. If no master code is entered during the 20 seconds of delay, the lock will enter a 15-minute wait period.

Hard Reset When the Master Code Is Unknown

Steps 1–3 are the same as when the master code is known. But once you enter the reset sequence state, don't enter anything during the 20 seconds of delay, and let the 15-minute wait period begin.

During that time, any operation on the lock will be ignored. If a key is pressed, a high beep will sound, but there will be no green light. It will be followed by the "reset sequence in progress" message and the lights will flash green and red once. If the handle is pumped, there will be a green light and a beep followed by the "reset sequence in progress" message and then flashing green and red lights once.

After the 15-minute delay, the "reset sequence in progress" message will be displayed again for 20 seconds. During this period, the user must enter the 1-2-3-4-5-6-7-8-# sequence, and the lock will reset. If the user fails to do so, the sequence will abort, and the lock will resume normal operation.

Troubleshooting the PowerPlex

When I started my first article series on the PowerPlex lock for *The National Locksmith* magazine a few years ago, the magazine shut down before I got to the topics of programming and troubleshooting. In fact, at the time, it had proven so reliable that I never actually considered a troubleshooting component. Things have changed.

The only reason why we started installing PowerPlex locks at our hospital was that we were having reliability issues with the L1000 locks we had been installing. We wanted a push-button lock that didn't "Accessing the reset button while the lock is still on the door isn't difficult; it's just a bit trickier."

require batteries. Originally, that meant a purely mechanical push-button lock, but the PowerPlex seemed the best of both worlds. The built-in power generator means no batteries are needed, and the fact that it is electronic means the number of concurrent individual user codes was not limited to one.

After a year, we probably had 100 or more PowerPlex locks in use, and there were no notable issues or problems. They performed almost flawlessly. Between then and now, a few issues have shown up. Now that doesn't mean that I previously thought we had the perfect lock and now we have nothing but junk. I still consider the PowerPlex to be rather impressive, but now we've come back to Earth on the superlatives.

The most serious issue with the Power-Plex is that the inside handle sometimes breaks off (*Figure 7*). Here is the handle (*Figure 8*) separated from the spindle that actuates the lock from the inside of the door. A slightly closer view (*Figure 9*) shows that the handle breaks off because it is cast and not forged or machined.

When I was primarily a commercial locksmith, one of my bigger customers was a testing laboratory. Walking



Figure 13. The broken part is still hanging onto the plate by the return spring.

through the facility to work on particular doors, I would see various devices cycle-tested by repetitive motion. A car door might be repeatedly opened and shut to see how many cycles it would go before failure or another problem.

I'm sure the PowerPlex locks went through something like that to see how many cycles the handle would go before failure. There is one fatal flaw in that concept: Everything is in laboratory conditions.

After about a year, we had the first interior handle break off. Then it seemed we'd have another break every few weeks. The first incident was a major problem, which I will discuss shortly. After the first incident, we were prepared, and the fix was quick and simple.

I would remove the mounting screws and the inside handle assembly (minus the handle that had broken off) would come off (*Figure 10*). You can see the part that connected to the handle that had broken off. The plate with the actuating part and spring (*Figure 11*) are on the floor in pieces. The snap ring that connected the handle to that part is shown hanging over the spindle (*Figure 12*). The broken part is still hanging onto the plate by the



Figures 14 and 15. The author took the old spring and reattached it to the new inside handle assembly.



Figure 16. The author is putting the new inside handle assembly on the door.

return spring (*Figure 13*). I would take the old spring and reattach it to the new inside handle assembly (*Figures 14* and *15*). I would then reassemble that part to the lock on the door (*Figure 16*) and fasten the screws. That's what I call a fast and easy fix. However, let me go back to the nightmare experience that gave me the incentive to fix these locks as soon as the handle breaks.

The Broken Handle

I, the hospital locksmith, was leaving for the end of the day when one of the charge



Figure 17. There are two holes on top and one on the bottom in line with the mounting posts.

nurses in the emergency center who knew me called my attention to a lock that had a broken-off inside handle. I told him to just keep the door ajar until I could look at it the next morning.

By the next morning, someone had let the door close and lock. It was a pantry with only one entry door. In one of the early parts of this article series, I made reference to the spring in the inside handle that pushes the spindle in the direction of the outer lock unit. What apparently had happened was that the spindle vibrated



Figure 18. This closer view shows the damage that made the lock no longer usable.

backward toward the inside of the door without the spring that would have been in the handle. When the spindle separated, the action of the outer handle no longer connected to the latch retracting mechanism, and the door would not open.

That meant we had to drill the outside lock unit off the door to access the latch retracting mechanism. We grabbed another PowerPlex lock to find out where the mounting posts were located and then drilled and destroyed the lock to get it off the door. You can see two holes on top



Figures 19 and **20**. On the left side (*Figure 19*), you can see the author drilled almost perfectly in line, while on the right side (*Figure 20*), the author had to drill a few times.



Figure 21. In the bottom, the drilling was almost dead center.

and one on the bottom in line with the mounting posts (*Figure 17*). A closer view (*Figure 18*) shows the damage that made the lock no longer usable. On the left side (*Figure 19*), you can see that we drilled almost perfectly in line, while on the right side (*Figure 20*), we had to drill a few times because we didn't hit the target directly the first time. In the bottom (*Figure 21*), we were also almost dead center.

The fundamental weakness was the construction of the inside handle. The die-cast handle couldn't handle the sometimes-rough usage. You can see how the end of the handle broke off (*Figure 22*) as it stays tied to the actuating part with the snap ring that attaches it. You can see the back side of that same broken part in *Figure 23*. All three of the drilled mounting posts are still attached to the mounting screws (*Figure 24*).

The problem was that there was only one opening into that room. If there was another door, we could have entered through it and then opened the door with the broken handle from the inside — without damaging the most expensive part of the lock. This is fair warning for other locksmiths who deal



Figures 22 and 23. You can see how the end of the handle broke off (*Figure 22*) as it stays tied to the actuating part with the snap ring that attaches it. You can see the back side in *Figure 23*.



Figure 24. All three of the drilled mounting posts are still attached to the mounting screws.



Figure 25. One of the drive pins for the small format core adapter had broken off.



Figure 26. The author has filed down the post where the outer handle is mounted.



Figures 27 and 28. On the top left of the figure-eight opening, there is a very small amount of excess metal that reduces the opening size (*Figure 27*) and prevents a core from being fully inserted (*Figure 28*).

with the PowerPlex or E-Plex locks. The basic construction is identical; only the way it is powered is different. A quick and smart response to a broken inside handle makes the job simpler and less expensive.

A more minor problem that we've found a few times is when one of the drive pins for the small format core adapter breaks off (*Figure 25*). I always keep a few spares. This doesn't happen often, but if somebody else does the installation but the core was not attached, sometimes this part is missing. It can't hurt to keep a few spares.

We have had a few manufacturing issues with some of the PowerPlex locks. Attaching the outer handle is sometimes a problem because the retainer won't line up with the slot in the handle. I have had to slightly file down the post where the outer handle is mounted so it can push down deeper to align the retainer slot (*Figure 26*).

Another recent machining issue has come up with the figure-eight opening in the handle to accept a small format interchangeable core. It's probably not easy to see, but on the left side of the upper part of the figure-eight opening, there is a very small amount of excess metal that reduces the opening size (Figure 27) and prevents a core from being fully inserted (Figure 28). That is as far as the core would enter. I was forced to take handles from other locks to complete the installations. The last four or five PowerPlex locks have had that same problem, so I've ordered some spare outside handles. I still consider the PowerPlex a pretty good lock, but they need to clean up some quality issues, and it could be a great lock.

One final occasional problem is that a lock will sometimes operate as if it were in passage mode. That means when you turn the handle, the lock will open without having to enter a correct code. This particular problem has been pretty rare, and I'm not sure if it is a mechanical or electronic issue.

As far as I know, the PowerPlex is the only push-button electronic lock that doesn't require batteries. It is a useful and versatile lock with a few flaws, but I think it is currently the only one of its kind. *S*



Sal Dulcamaro started out in locksmithing in 1975 at age 17. He first practiced as a commercial locksmith before becoming an institutional locksmith

in May 2014 for a large hospital. He has been a technical writer for more than 30 years, with more than 300 magazine articles published. He previously served as a contributing editor and a technical editor for *Reed's Security Reporter*.



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Date Signed

Date

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Tips, Hacks and Time-Savers

Tony Wiersielis, CPL, CFDI, provides some solutions, hints and warnings.

SUALLY WHEN I WRITE THESE ARTICLES, THEY'RE ABOUT SOMETHING I've done or observed recently that I think might be of interest to readers. Because of the pandemic, I haven't been able do or observe much of anything for the past three weeks. It's mid-April as I'm writing this.

Because of that, I've gone through my picture archives to bring you some tips and insights that weren't enough for an article by themselves, plus a really short story.

The Ferry

This happened in November 2016 when I was sent up to Vermont for a couple of weeks. The job was recombinating 700 BEST cores at a government training center. Somebody had lost a grand master key — one of those nightmare scenarios I keep telling the newbies to avoid like the plague.

The plan was that I would travel on Monday and start work on Tuesday. It was a five-hour trip, so I left a little after noon, figuring I'd get there in time to eat dinner with the rest of the crew. I plugged the address into the navigator on my phone, and off I went.

The closer I got, the more rural it became, and the roads went from interstates down to two-lane country roads. I was passing old red barns and cows every few miles.

About an hour or so away from my destination, I started passing signs for a ferry. I didn't think much of it until my phone signal started fading in and out along with the navigator.

The next time I had a decent signal, I checked my navigation settings and noticed I didn't have "ferries" in the off position. I tapped the phone to look at the route ahead of me and saw a body of water, and then I lost the signal completely.

I was in the middle of nowhere at dusk. I was flying blind, apparently trying to find a ferry. I kept following the signs, hoping the boat was still running.

I finally got to the empty parking lot of the ferry terminal at 7:30 p.m. I was the only vehicle on the last trip of the night across Lake Champlain.

And when I got to the other side, it was another half an hour to get to the hotel. Never got that dinner.

The lesson to be learned is to check the settings on your navigator. On subsequent trips there in the coming weeks, I made it — on dry land all the way — in about five hours.







Figures 2 and 3. Figure 2 is the makeshift door loop, and Figure 3 is at the strike side.

office building.

Figure 1. You can see here how somebody transferred power across a Herculite door

to an electric strike on the front door of an

BACK TO BASICS Tips, Hacks and Time-Savers



Figure 4. Two aluminum sliders butt against each other, and another slider overlaps them to the left.

Unique Problem Solvers

Number 1: *Figure 1* shows how somebody transferred power across a Herculite door to an electric strike on the front door of an office building. I didn't get a picture of the lock and strike, but you've got to give them an A for effort in making it work at all (no matter how tacky it looks).

That's foil alarm tape — the same stuff the alarm installers used to use to trigger glass breakage years ago. *Figure 2* is the makeshift door loop, and *Figure 3* is at the strike side. Since the foil is old and damaged, they ran wire on top of it and tapped it in place, as you can see in *Figure 3*. In 30-plus years, that's the first time I ever saw that.

Number 2: A few years ago, there was an electrical fire in the basement of one of the Manhattan college buildings I work in. It was evacuated, and the occupants were dispersed around the campus in other buildings.

This mass movement placed people in spaces with doors that were never intended to be locked. I had to figure out how to do this. Some of these rooms had three



Figure 5. This photo shows how the author secured the two sliders together.

doors in one large opening. In *Figure 4*, you can see two aluminum sliders that butt against each other and another slider that overlaps them to the left.

All this had to be done quickly — the day they told me. It seemed as if the only way I could do this was with hasps, padlocks and chains. I told this to the powers that be, and they did not care how as long as I could lock the doors.

Figure 5 shows how I secured the two sliders together. I then bent another strike at a 90-degree angle to secure them to the frame so they wouldn't move. I believe I used a flexible hasp to secure the overlapping door. *Figure 6* shows two handles I was about to secure with a chain. *Figure 7* is a hasp on a pair of pocket doors. Honestly, I hate to do this to clean aluminum doors, but I had no choice.

More BEST Hacks

In my recent articles on BEST hacks, I forgot this one: If you have a core that turns intermittently, you might have a crushed or missing spring in one of the pin chambers. This is especially true



Figure 6. The author was about to secure two handles with a chain.

when the core is sideways, as in a cylindrical lock, because gravity won't make the pins drop down.

You can sometimes lubricate the core and tap on the lever to get the pins to move and pull the core. Once you get it out, shake it while listening as I am in *Figure 8*. If there's a crushed or missing spring, you'll hear the pins moving up and down. Use a pin ejector or punch to check each chamber (*Figure 9*). The one with no spring tension is your issue.

Here's another that can be used on any cylinder: Sometimes it's necessary to have a mortise cylinder turn in one direction and not the other. The one I'm working on in the next two pictures was for a key switch. There was a lot of wire inside the electrical box the switch was installed in. I wanted to avoid unnecessary cam movement that might damage wire and confuse the users, so I decided to install a stop on the back of the cylinder.

In *Figure 10*, I'm tapping a hole for a screw in the back of the cylinder. Look in the jaws of the vise and you'll see the handles of a BEST cylinder wrench, which



Figure 7. A hasp is shown on a pair of pocket doors.



Figure 10. The author is tapping a hole for a screw in the back of the cylinder.

I clamped into the vise to hold the cylinder. Doing so avoids damage caused by trying to clamp a round cylinder in a square vice.

Figure 11 shows the nearly completed process. Note the Loctite, which is essential to keeping the screw in place. If I had red Loctite, this would be one of the rare occasions I might use it. Obviously, when this dries, I'm going to cut the screw to the same height as the back of the cam. If set up this way, the key will not turn counterclockwise.

Yet another: Multi-stall restroom doors at the college used to be locked, and they always take a beating, particularly the locks. I've been replacing damaged mortise locks with



Figure 8. Once you get the core out, shake it while listening.



Figure 9. Use a pin ejector or punch to check each chamber.



Figure 11. This image shows the nearly completed process of installing a stop on the back of the cylinder.

passage function, but as you can see in *Figure 12*, BEST passage locks don't come with any yoke to tighten the cylinder in place. What I do is remove the yoke assembly (*Figure 13*) from damaged locks before I scrap them and use them in the passage lock.

If you're wondering why I'd do this, it's because the old lock used to have a cylinder, and I need to fill the hole. I usually install a dummy cylinder, but in a pinch you can use the old cylinder. If you do, turn it upside down so somebody doesn't try to lock it — and then call you to say the "key just spins around." If they do, ask if the cylinder is upside down, and you'll remember you did it.

Time-Savers

I've mentioned before that I do a lot of second-shift work in schools after the kids leave. The custodians usually work in another part of the school while we're installing. Some of these schools are huge, so when we move to a section where the hall lights are off, we don't want to go nuts chasing one of them down to turn the lights on and off.

Figure 14 is my key ring showing two types of common tamperproof light switch keys. These solve the problem nicely, and they're pretty cheap; the one stamped Leviton was two for \$3 on eBay, so I gave the extra to my buddy Bill. Just remember to shut the lights off when you're done. It ticks the custodians off if you don't.



Figure 12. BEST passage locks don't come with any yoke to tighten the cylinder in place.



Figure 13. The author has removed the yoke assembly from a damaged lock.



Figure 15. Two-way radios can be big time-savers.

Another big time-saver in schools is a pair or more of two-way radios like the ones in *Figure 15*. It's common to have lousy or no phone signal in school buildings because they're usually made of cinderblock and steel. The radios often will be able to connect in spite of that. You don't want to borrow your kid's toy radios to do this or go cheap on the ones you buy. Pick a quality brand, and you'll never go wrong. Mine are made by Midland.

Figure 16 shows something you want if you do a lot of walking from building to building, like I do at the college. I had a huge roll of hazard tape in my truck, but



Figure 16. The author keeps 100 feet of hazard tape in his tool pouch.

who wants to carry that around? I rolled off about a hundred feet of it and stuck it in my tool pouch. I also always have a roll of electrical tape.

When I work on a door in a high-traffic area, I use the electrical tape to hang the hazard tape across the frame to warn people away. It helps cut down traffic through my door, but it can't stop the "Can I sneak by?" people.

Figure 17 is something I saw in a board of education maintenance building in NJ. With all the stress of the COVID-19 virus, I thought I'd add a little levity to the situation. I don't know if this is a prank or



Figure 14. Two types of common tamperproof light switch keys are shown.



Figure 17. Is it a prank or an actual seat?

somebody actually uses it as a chair, but if it's a prank, it's genius.

Stay safe, wear your PPE, carry some hand sanitizer, cover both your mouth and nose and maintain social distance. We'll get through this. *⊗*



Tony Wiersielis, CPL, CFDI, has more than 30 years of experience and has worked in most phases of the trade throughout the New York metropolitan

area. He was named *Keynotes* Author of the Year for 2016.

Old Dog Learns a New Trick

A student reviews an online ALOA class and gives suggestions for other learning opportunities. **By Jason Biel**

> ITH THE NATION IN LOCKDOWN AND MANY SECURITY conventions canceled, you may find yourself lacking the standard opportunities to earn Continuing Education Units (CEUs) for state licensing, meet fellow tradesmen or just simply learn or refresh your knowledge base. Fortunately, the

interwebs and its numerous capabilities have availed us of opportunities to continue connecting and learning.

The good team over at ALOA recently offered an online webinar covering professional bypass, picking and raking. This invitation to participate — for a small fee — arrived in my email. I was more than a little skeptical about how learning such a hands-on topic would actually play out in this online format, but with more than enough spare time on my hands, I decided to go ahead and register.

You can register for classes on the same website where you pay your membership dues and sign up for conferences: www.aloamembers.org. Click the Event Registration button for the latest offerings. I quickly received a confirmation email with some instructions when I registered. It all seemed simple enough.

Preparing for Class

A day out from the webinar, I started receiving emailed instructions with links to the class and timing reminders. These emails also provided other ways to connect to the class besides a computer, such as using audio-only options or downloading a free application on your smartphone.

Admittedly, this was my first time using the Lifesize video software on my web browser, but the simple requirement to add your name and join the meeting was easy enough. I was unsure if I needed to have my camera on (it was an option), but as everyone joined, it became obvious that most had theirs on. I quickly donned a cap to cover my unkempt, end-of-the-day hair, and with the simple click of the camera icon, I also appeared on the screen. Too easy.

ALOA Education Manager Jim Hancock, CML, CMST, was the instructor. He was joined by Joe Peach, CML, CAI, ALOA's assistant education manager, to ensure the entire show ran smoothly. They had obviously learned a few lessons from the class's earlier presentation. There was a quick roll call to account for everyone who had registered, and then Jim started the class off with a quick survey of everyone's grasp of the subject matter and their reasons for attending. Most of the class was there to meet their CEU requirements. He then got down to business.

Class Begins

After a few quick slides covering the class intent, definitions and such, Jim turned on a camera that focused on the lock in one hand and pick in the other. He easily demonstrated the many techniques.

He offered many tips from not only the vantage of a very proficient lock picker but also from his role as a seasoned instructor. His emphasis on continual practice of this perishable art was particularly notable. Despite being an accomplished lock picker myself, I still found several nuggets of knowledge.

The only source of criticism or suggestion I could offer is that if a meeting participant's microphone is not muted, it can create some distracting feedback. This can be easily addressed as all users become more familiar with the platform or its like. Even so, it was nothing that stopped the class or prevented learning.

The class lasted about an hour and a half, and it was time truly well spent. After class, I took the time to reach out to a few fellow participants via LinkedIn. Building a network of professional peers has never been easier between the many social media platforms out there, and this live video feed allowed me to put faces with names. Several of us have connected, and their diverse locksmithing experiences — institutional locksmiths, business owners, junior members of large teams or simply regional variances — all added to the learning.

A few days after the training, I received both a certificate and the class Power-Point slides. Again, while I was already



Figure 1. The 20 or so slides used for the class were not only filled with the assumed basics on lockpicking but also with practical suggestions and tips of the trade.

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Figure 2. The only thing better than your name on a cool-looking certificate of training is the knowledge you gain while getting it.

familiar with the topic, the ability to use the slides to either assist in teaching a new guy the ropes or just provide some refresher knowledge to the team was a welcomed addition.

Overall, despite my initial reservations, it was worth both my time and money. I can only assume the classes will get even better as ALOA's online offerings continue to grow and as their online teaching expertise increases.

Other Opportunities

Beside ALOA's online partners over at www.assaabloyacademy.com for some great lock and hardware training, another recent recommendation that I have been sharing with colleagues is an online learning offering from Bosch. While it is brand-specific, you can always brush up your video, access control and intrusion alarm systems knowledge for free.

Bosch Security and Safety Systems has some great basic online courses about their products and some truly challenging classes relating to more integrated and complex system designs. Again, all of them are free. Even if your current business is not even remotely related to the alarm business, surely you are frequently asked about alarm systems by some of your customers.

At a bare minimum, these classes can provide you and your team a generalized

knowledge base of capabilities available in the marketplace. Their qualifications — depending on what classes you successfully complete — earn the following levels of certification: professional, expert and their highest level, master.

Bosch Security and Safety Systems' Bosch Security Academy can be found here: bit.ly/BoschSecurityandSafety. When you create an account, there is a small wait (usually a few days) as your account is approved. After that, you have access to dozens of classes on product capabilities, system design and installation.

If you want basic business knowledge, there are free online classes out there for that as well. For a solid overview of business fundamentals, there are almost 20 online self-paced options available from the United States Small Business Administration. Their classes on pricing and its impact on the success of your business, legal requirements for small businesses and selling your business, etc. can all be found at www.sba.gov/ course/#main-content.

For more in-depth business acumen, there are plenty of universities and colleges that offer their classes for free auditing. Some are offered directly through the university, such as Harvard's (bit.ly/Free-HarvardClasses), and some are offered through other providers' platforms. The following two classes start every couple of months and give you the chance to learn from the some of the nation's finest business colleges. Take the Introduction to Financial Accounting class from the Wharton School of the University of Pennsylvania (bit.ly/WhartonAccounting) or Foundations of Business Strategy from the University of Virginia (bit.ly/ VirginiaBizStrategy).

Sure, nothing will truly replace the full benefit of learning in a live small classroom setting. With the many nuanced interactions from a seasoned instructor during some of our more hands-on technical classes, it is unlikely they will be replaced. Yet, there is still knowledge to be gained from the many avenues of education available today. That all said, it does seem an old dog can learn a new trick or two. @



Jason Biel is a darn fine safe technician serving the greater eastern Kansas region. When not in isolation due to the required social distancing he is servicing

small town, military and defense industry customers alike. Jason frequently writes about his many lessons learned in safe openings in a little publication called *Safe & Vault Technology*.

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American Security Products Phone: 800-421-6142 Fax: 909-685-9685 www.amsecusa.com

ASSA High Security Locks Phone: 800-235-7482 Fax: 800-892-3256 www.assalock.com

ASSA, Inc. Phone: 800-235-7482 www.assalock.com

Autel US Inc. Phone: 855-288-3587 www.autel.com

Big Red Safe Locks Phone: 541-533-2403 Fax: 541-533-2404 www.bigredsafelocks.com

Blackhawk Products Phone: 970-882-7191 www.lockcodes.com Brivo Phone: 540-553-4333 www.brivo.com

Bullseye S.D. Locks LLC

Phone: 859-224-4898 Fax: 859-224-1199 www.bullseyesdlocks.com

CarandTruckRemotes.com Phone: 678-528-1700 Fax: 844-457-8948 www.carandtruckremotes.com

CODELOCKS Inc. Phone: 714-979-2900 Fax: 714-979-2902 www.codelocks.us

Comfo Safe Manufacturing Co. Ltd. Phone: 886-628-19033 Fax: 866-625-13798 www.comfosales.com

CompX Security Products Phone: 864-297-6655 Fax: 864-297-9987 www.compx.com

DETEX Corp Phone: 800-729-3839 Fax: 800-653-3839 www.detex.com

Digipas Technologies, Inc. Phone: 949-558-0160 Fax: 949-271-5701 www.egeetouch.com

Don-Jo Manufacturing, Inc. Phone: 978-422-3377 Fax: 978-422-3467 www.don-jo.com

Door Closer Service Co. Phone: 301-277-5030 Fax: 301-277-5080 www.doorcloser.com

Door Controls International Phone: 800-742-3634 Fax: 800-742-0410 www.doorcontrols.com

Dorma Architectural Hardware Phone: 717-336-3881 Fax: 717-336-2106 www.dorma-usa.com

dormakaba Best Phone: 317-810-1000 www.dormakaba.com

Dugmore & Duncan, Inc. Phone: 888-384-6673 Fax: 888-329-3846 www.dugmore.com

Entrematic Phone: 704-290-5541 Fax: 704-919-5014 www.ditecentrematic.us

Everlock, Inc. Phone: 562-666-6066 www.everlockus.com

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

Guru Lock Network Phone: 888-560-9947 Fax: 866-684-5559 www.gurulock.com

Hollon Safe Phone: 888-455-2337 Fax: 866-408-7303 www.hollonsafe.com

HPC/Hudson Lock Phone: 800-323-3295 Fax: 978-562-9859 www.hudsonlock.com

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IKEYLESS LLC. Phone: 502-442-2380 www.ikeyless.com

Inkas Safe Mfg. Phone: 416-744-3322 Fax: 416-744-3535 www.inkas.ca

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

International Key Supply Phone: 631-433-3932 internationalkeysupply.com

Jet Hardware Mfg. Co. Phone: 718-257-9600 Fax: 718-257-0973 www.jetkeys.com

JMA USA Phone: 817-385-0515 Fax: 817-701-2365 www.jmausa.com

KABA ILCO Corp. Phone: 252-446-3321 Fax: 252-446-4702 www.kaba-ilco.com

Kenstan Fixture Services USA, LLC Phone: 855-342-3132 Fax: 516-612-0101 www.kenstanfixtureservices.com

KEY-BAK/West Coast Chain Mfg Phone: 909-923-7800 Fax: 909-923-0024 www.keybak.com

Keydiy USA, Inc. Phone: 407-608-4288 www.keydiy.com

KEYINCODE, LLC Phone: 978-207-0269 https://keyincode.com Keyline USA Phone: 800-891-2118 Fax: 216-803-0202 www.bianchi1770usa.com

KEYTECHNOLOGIES BY MG LLC Phone: 407-620-1787 www.keytechtools.com

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KSP-Killeen Security Products Phone: 800-577-5397 Fax: 508-753-2183 www.iccore.com

LAB Security Phone: 800-243-8242 Fax: 860-583-7838 www.labpins.com

Locinox USA Phone: 877-562-4669 www.locinoxusa.com

Lockey USA Phone: 989-773-2636 www.lockeyusa.com

Lock Labs, Inc. Phone: 855-562-5522 www.locklabs.com

Lock Net LLC Phone: 800-887-4307 Fax: 877-887-4958 www.locknet.com

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

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

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

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

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

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

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

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

SR Products, Inc. Phone: 352-503-6826 FAX: 352-503-6827 www.strike-right.com

Stanley Security Solutions Inc. Phone: 317-572-1934

Finite: 317-572-1334 Fax: 317-578-4909 www.stanleysecuritysolutions.com

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

TownSteel, Inc. Phone: 626-965-8917 Fax: 626-965-8919 www.townsteel.com

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

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

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

SERVICE ORGANIZATIONS

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

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

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

FieldEdge, Formerly dESCO Phone: 888-614-0184 www.fieldedge.com

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

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

Lockmasters Security Institute Phone: 859-887-9633 Fax: 859-884-0810 www.LSIeducation.com

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

Westlake Web Works Phone: 952-745-4105 Fax: 952-475-3579 westlakewebworks.com

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

FOR SALE

Locksmith Business for Sale

24-year Locksmith Business For Sale (everything behind the counter) – put the following number in the search bar at eBay: 254412354519 for details. \$70k worth for \$13k due to retiring and health. Email ffc.jcv@att.net for guestions. <09/20>

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A-1-A Preston's Lock Shop has been in business for over 43 years. Located in downtown Atwater, CA, this family-owned locksmith was originally started out of a garage in January 1977. The Shop officially opened in Atwater in 1981. In 2002, the current owners, which are husband and wife, continued the family business and are both licensed locksmiths. A-1-A provides services for Residential, Commercial and Automotive. They offer in-house lock services and full mobile service! They provide services to Merced County and surrounding areas. The Shop sells keys, locks, safes, handles special orders, programs transponder keys, reflashes ECUs, and many other products and services. This is a well-established business in a great location and is an amazing business opportunity! This thriving 43+ year business is active and will remain open during the sale. Current owners are willing to stay on during transition to new owners. Turnkey business includes building, complete inventory, key machines, two vans and programmers. Contact Kelly Hasko at (209) 495-1263 or kellyhasko@gmail.com. <09/20>

Locksmith Business for Sale

Please be advised AACE GLASS LOCK AND KEY AFTER 25 YEARS IS FOR SALE. Due to aging parents and family needing assistance in Florida, we are relocating. Our well-established profitable business is well staffed with tri-lingual experienced employees and 8 staff are staying with 2 managers willing to oversee the whole operation. Our business platform is 3 businesses. Primarily we are a locksmith company specializing in Automotive locksmithing as well as residential and commercial with many accounts. We are also a full service auto glass company and have an active mechanic at our shop cross-trained in auto glass and locksmithing. Though our business is still busy due to our quick move and covid-19 scare, we are selling and almost half its true value. This is an excellent opportunity for anyone to expand. In 25 years, we never had 1 claim or employee theft. Several of our employees are full time ministers. Please contact me directly if you have questions. aaceglasslockandkey@gmail.com 205-965-9976

Jerry Hernandez Owner Operator <07/20>

Johns Lock and Key Business For Sale 114 McFarland Street, Charleston, WV 25301

50-plus years and single owner in Charleston, West Virginia, servicing the Federal, State, County, City, local businesses and residential customers. Sale price last 3 years gross sales includes all inventory, new and old locks, support equipment and logs. *Criminal background check required!* For more information, call 1-304-344-4204 8:30 to 4:00 Monday thru Friday. **<07/20>**

LOCKSMITH BUSINESS FOR SALE

West Palm Beach, FL Over 35 years in business Owner retiring. Call for more info: 561-964-6114 <06/20>



Classified Advertising Policy

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

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

Advertiser	Ad Location	Website	Phone Number
ASSA-Ruko/Technical Services	page 37	www.assatechnicalservicesinc.com	(724) 969-2595
Autel	page 33	www.autel.com	(855) 288-3587
Big Red	page 37	www.bigredsafelocks.com	(877) 423-8073
Bullseye S.D. Locks	page 37	www.bullseyesdlocks.com	(800) 364-4899
ClearStar Security Network	page 59	www.clearstar.com	(360) 379-2494
Framon	page 31	www.framon.com	(989) 354-5623
Hollon Safe	page 1	www.hollonsafe.com	(888) 455-2337
Jet Hardware Mfg. Co.	back cover	www.jetkeys.com	(718) 257-9600
KABA ILCO	page 5, inside back cover	www.adusa.us/smartpro	
Lockmasters	page 13	www.lockmasters.com	(800) 654-0637
ScopePlus Labs	page 37	www.scopelab.us	(386) 427-2462
Security Door Controls	page 29	www.sdcsecurity.com	(800) 413-8783
Security Lock Distributors	inside front cover	www.seclock.com	(800) 847-5625
Stone & Berg Company	page 23	www.stoneandberg.com	(800) 225-7405
Turn 10 Wholesale	page 3	www.turnten.com	(800) 848-9790
UHS Hardware	page 15	www.uhs-hardware.com	(954) 317-0997

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