Using Speed Charts for SFIC

By Lee W. Rink, CJIL

Like so many locksmiths I know, I am a packrat. My wife might say this is an understatement, but I’m not as bad as some. Much of the stuff I have gathered are notes and literature from classes I’ve taken through the years. So cleaning my desk can be like a treasure hunt. I never know what I might find.

During one of these hunts, I came across a class binder for a KABA Peaks class. When I took the class I didn’t work with Peaks, and only did some work with Best SFIC. After changing career paths from Commercial to Institutional Locksmithing, I now work a lot with Best cores.

One of the challenges with SFIC is calculating the pinning for each core. Now I know there are computer programs that will do it for you, along with other forms and tools that help with calculating the pins.

I just saw an ad for an app that will show you the pinning on your smart phone. But I have a bare basic phone, and I might not be near the computer. If I am setting up 30-40 cores or more, to individual keys, I do not want to spend the time writing out each pinning. That can be a lot of time and paperwork.

While I was looking at the class notes that I had forgotten about, I found a very simple form for SFIC systems to calculate pinning cores. The nice thing about the form is that all the pinning calculations for all of the keys in a system will fit onto one sheet of paper. It is called a Speed Chart.

To use the speed chart, a few basics will need to be covered. The first is generating a key bitting array (KBA). This array shows all of the possible change key combinations in a system under a Top Master Key (TMK). The next is calculating the pin stack for an A2 system.

There are three different pinning systems for Best cores, the A2, A3, & A4. All three use different calculations for the pin stack.

The most common of these is the A2 system, which is what we will use. This form is not for generating a Masterkey system, it is a supplement for a system that has all ready been made.

The first step is writing in the bittings for the control key and the TMK of your keying system. Looking at figure 1, you will see that the control key bittings go into the squares on the top row. For this example, the control key is going to be 3094985. The TMK bittings will go into the row below that. The TMK will be 7610509. Next, the KBA will need to be filled out. Starting with the first column, the large ovals will be filled.

(Continued on Page 8)
Institutional Locksmiths’ Association, Inc.

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Know Your Board Members ~ Tara Williams, CJIL

I am Tara Williams. I was born in Ohio. I’ve lived in South Florida, the Outer Banks of NC, in the small town of Nashville, NC, and I now reside in Raleigh, NC.

I love to travel. I’ve been to Seattle, Los Angeles, Las Vegas, various cities in Arizona, New Mexico, Texas, Oklahoma; Arkansas, and Tennessee. I drove out to Las Vegas for the 2008 ILA Education Conference. (2500 miles in two and a half days!) I have been up and down the eastern seaboard states many times and even ventured into New York one Thanksgiving, and New Haven CT for an ILA Convention. Yes, I love traveling!

My work experience involves many things: cooking, computers, office work, carpentry – yes, building houses from the ground up; telephone installation & repair; and locksmithing. I have always had a gift for working with my hands and for working with hand tools. My ideal “shopping trip” is touring the local home improvement stores and looking for project ideas!

I took the Foley-Belsaw course in 1989 and received my diplomas with pride. I operated a one-person shop as “The Lock Lady” for several years.
I began my current job in 2004 at North Carolina State University, where I started as Locksmith I and quickly moved up to the position of Locksmith II. My skills have increased and it is fun learning all of the new skills in the security industry.

I went to my first ILA Conference in 2005 in Secaucus, NJ. I took the ILCP and passed; my first step towards becoming a CJIL. After the conference, I was invited to be on the ILA’s National Board.

In 2008, after considerable urging from National, and with the help of many of the local members of ILA, I helped found and was the first President of the Olde North State Chapter. The chapter now has over sixty members.

In 2010, I was elected Vice-President of the national association.

In 2011, the Olde North State Chapter hosted the ILA Education Conference & General Membership meeting. It was a great learning experience for me. It seemed to go well, and the feedback is that a good time was had by all.

I am optimistic about the future of our organization; it is growing and improving every year, and I look forward to learning and growing along with it. I also look forward to making more and more new friends as we grow and I get to travel!

HOW TO:

Apply YOUR KBA to the Speed Chart you developed

In Lee’s article, he showed you how to develop a Speed Chart for your specific organization. In his example, he used a TMK of 7610509. Therefore his KBA, assuming we were progressing all positions, would have looked something like:

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<td>9 8 3 2 7 2 1</td>
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TOP (THEORETICAL) MASTER
(KBA)
KEY BITTING ARRAY
⇔ SEQUENCE OF PROGRESSION

Compare the KBA to his Speed Chart and the relationship will be quite obvious. This is the same type relationship you will need to create using your own system’s KBA.
The ILCP Study Guide
Version 2 Now Available!

The official ILA *Study Guide for the Institutional Locksmiths Certification Program* (version 2) is now available. It contains study information needed for the Certified Institutional Locksmith (CIL) level exam and for the mandatory portion of the Certified Journeyman Institutional Locksmith (CJIL) level. Now included is resource information for the CJIL and Certified Master Institutional Locksmith (CMIL) electives. It also includes the *Professional Locksmith Dictionary* from the LIST Council, for a total of over 100 pages of study and resource material one book!

This version contains the first significant revisions and additions to the *Study Guide* in many years!

To purchase a copy, send check or money order (or use the credit card form found at ilanational.org) for $25 to:

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Electronic Access Control

In this book, Thomas L. Norman, a master at electronic security and risk management consulting and author of the industry reference manual for the design of integrated security systems, describes the full range of EAC devices—credentials, readers, locks, sensors, wiring, and computers, showing how they work, and how they are installed.

The book presents an arcane and complex subject with a conversational and layered learning approach which results in a thorough understanding of each point, thus offering quick career advancement potential to students and prospective security professionals.

Electronic Access Control truly is a one-of-a-kind book and will definitely make an important addition to your library.

-- ASIS International.com

Lehigh University
Unveils New Locksmith Shop

Bethlehem Pa.

Lehigh University’s office of Access Control and Locksmithing has just undergone a major renovation. The renovation, which included taking over the former Brickman shop on the lower floor of their building and a complete overhaul of their upper floor and former locksmith shop, took place over the last four months starting in late March 2013.

The office area and locksmith shop which formerly occupied a very limited space on a single floor has been extensively renovated providing key distribution and card access service as well as a wide open office workspace and management office on the upper floor with a new locksmith shop and inventory area on the lower floor.

The renovation gives the Access Control and Locksmith staff more working room all around while increasing services by incorporating all key distribution which was formerly done at the Facilities Services building.

The locksmith shop was designed and laid out by John W. Rendle (CJIL) in response to concerns expressed by his co-workers over the original layout by a private architect. “I redrew the blue print by hand on my home drafting table and I tried very hard to lay out everything logically with a minimum walkway through every area of the shop of four feet width. This eliminates us always tripping over each other in the course of our work and allows us work more efficiently and logically. I can't wait for (former manager) Don O'Shall to see it. I'm sure he will be proud of what we accomplished together here.”

Rendle presented the new layout to his co-workers for their input and approval after which he presented it with their support to manager Jeff Seymour. Jeff in turn presented it to the project manager who readily approved the new design.

The new shop features a new key making area on a 12 foot long work bench with full complement of key code cutters, punches, duplicators and an Engrave-Pro machine for marking keys and cores, two pinning desks, a 14 foot long work bench, a full array of hand and power tools along with a very large and well organized inventory of locks, exit devices, parts and specialty tools.

“This has not been an easy transition but it was well worth the effort we all put in. Moving our stock in and out of the building, moving the office downstairs and then back upstairs when the office was completed made for some very tense and complex moments. There is a lot more work to do at this point to achieve full organization after moving all of our stock and tools but I am confident we will be finished very soon,” says Rendle.

The new renovation also incorporates two ADA compliant restrooms, new carpeting, new work stations for all staff, a new meeting/lunch table and a kitchenette in the office area.

The staff at the shop includes ILA members; Manger, Jeffery L. Seymour, Senior Access Control Tech, Karen Brice (CMIL), Lead Locksmith Tech. John W. Rendle (CJIL), Locksmith Tech. Joseph Cavanaugh. Additional staff includes Key Distribution Director Rose Szepanski and part time locksmith Bradley Hendershot.

Asa Thorpe –contributor.
News from the ILA Board of Directors

John Treumpy Resigns as President of ILA Board

In early July of this year President of the ILA Board of Directors John Truempy resigned the from the office of president of the ILA board and from the board itself citing his taking a new position with another association. The board thanks him for his great service and dedication in the past and wishes him well in his new venture.

Vice President Tara Williams, in accordance with the bylaws, has assumed the role of interim president for the remainder of the term. A new president will be elected at the board meeting in October at the ILA Conference.

ILCP Testing Is Now Available Online

The ILA board of directors has approved, and the ILCP committee have begun, to provide the ILCP testing online as of mid-August 2013.

The new program was begun to give greater accessibility to the testing and to provide greater convenience to the test takers.

This will allow you to schedule a test time and date to fit your own personal schedule and to take the test from the comfort of your own home or office.

For further information on the ILCP testing and study guides please see the ILA National Website at www.ilanational.org.

Dues Increase to be Discussed at National Board Meeting.

The ILA Board of Directors will be discussing the possibility of increasing the membership dues for the first time in 30 years in order to offset the increasing costs of operation and to pay for further services to the membership at the executive board meeting in Chicago next month.

The amount and how it will be divided between the board and the chapters is also not yet fixed.

ILA National Conference Set for October 2013

The ILA National Educational Conference has been set for October 2nd through 5th and will take place at the Holiday Inn Elk Grove in Elk Grove, Ill. near Chicago.

The General Membership Meeting will be held on Thursday, Oct. 3rd from 6:30 to 7:30 pm followed by the Executive Board Meeting from 7:30 to 8:30 including elections of officers and new directors.

A wide variety of classes will be held on Thursday and Friday, Oct. 3rd and 4th.

The Assa Abloy Intelligent Openings Showroom RV will be open on Friday, Oct. 4th from 1:00 pm to 5:00 pm.

ILCP testing will also be available on Saturday Oct. 5th from 8:00 am to 12:30 pm for those wishing to take tests.

For further information and registration please see the ILA website at www.ilanational.org.

ILA Task Force on School Security Named

In January 2013 at the Executive Board meeting, president John Truempy appointed a National Task Force on School Security to research and prepare resource guides for educational institutions who wish to increase their security systems in light of the Newtown School Massacre.

John Wilkes Rendle (CJIL) has been named to chair the task force along with board members Don O’Shall (CMIL et. al.) and James Swift (CIL).

Research is ongoing and should result in a comprehensive resource guide that can be made available to all educational institutions including K-12, colleges, universities, technical schools and so on.

Asa Thorpe - contributor
Where We Are and Where We Are Going

For thirty years now the ILA has been the primary association to service members of the Institutional Locksmith community. We have offered services such as the ILCP, Education, and communication on a wide scale between fellow institutional locksmiths.

This past June ALOA-SPAI launched their own institutional locksmith association, AIL. This was done as a result of the ILA not wishing to become subservient to ALOA. The president of ALOA, Tom Demont approached our president after the April Executive Board Meeting to offer him the position of director of their new organization which he refused at that time. Not long after, however, he did accept the position and the board was shocked to see a press release from the AIL featuring our own president as their new director.

Since that time Mr. Truempy has resigned from the presidency and the board of the ILA. This has prompted a great many rumors regarding the future of the ILA and where we are going. Along with the rumors are reports I and others have received from industry people regarding certain unkind statements and comments made by members of the management of ALOA and the AIL.

Let me set the record straight with regard to where we are and where we are going. First off, we are still strong and will continue to exist as the primary and best source of services for the institutional locksmith.

We have our conference coming up in October in Chicago (actually Elk Grove). This will feature many classes, ILCP testing, the Assa Abloy Intelligent Openings RV, our general membership meeting, our executive board meeting and elections to the board and for officers of the board.

Our ILCP is now online and available to all our members at a very reasonable cost. The feedback from those having already taken advantage of this service has been universally positive.

The membership committee is committed to growing our membership and at the last board meeting we got our first international application.

Additionally Don O’ SHALL has a list of several thousand names of institutional locksmiths in the USA to whom we would like to send mailings regarding the ILA and what we can offer. Assistance with this is very necessary as it is a herculean task to assemble and send out such a mailing.

With increased membership and membership participation will come a great voice from you, the members, to the manufacturers and suppliers from this industry. That is necessary so that they can start to develop products and services to serve you better in your jobs.

The executive board is also looking at many other ideas for increased services to the membership and that is the crux of the issue. We are here, as an association, to serve our members.

In short the ILA is not going away. With good leadership and inspired ideas we can and we will be around for a very long time.

If you have ideas, concerns, solutions or would just like to help you can contact any member of the board via the email addresses on the ILA main page at www.ilanational.org

One final thought for you all. I know it’s been a long time since you received an issue of this newsletter, and I apologize and take full responsibility for the delay in getting this out. I refuse to make excuses to you and will work hard to get the newsletter out to you regularly with more news, more diverse articles and maybe a few laughs along the way.

If you would like to contribute an article please let me know at jw2103@yahoo.com and please check out Lee Rinks fine article in this issue on Speed Charts.

Thank you for your patience,

John Wilkes Rendle, CJIL
Editor in Chief
Using Speed Charts for SFIC

To do this, first look at the TMK bitting for that column. In this case it will be a 7. The A2 system uses a two step increment for the change keys. This means that the change key cuts for this column will be a 9, 1, 3, or 5. These numbers go into the first four ovals in column 1. The fifth oval has the same number as the TMK. The reason for this will be explained later. Next we do the numbers in the second column. The TMK bitting is a 6, so the numbers in the ovals will be 8, 0, 2, & 4. Continue with the rest of the columns following the same pattern.

Now it is time to make the pinning calculations for the A2 system. The A2 system uses a pin stack of 23. This means that the size of the bottom pin + master pin + control pin + driver pin = 23. Looking at the first change key bitting, in the first column, you will see three square boxes next to it. The bottom box is for the bottom pin. This is found by looking at the change key bitting, and the TMK bitting, and writing the smaller of the two numbers. The middle box is for the master pin. This is the difference between the change key bitting and the TMK bitting. So far it is just basic masterkeying calculations. Now it gets fun.

To begin, we start by looking at the control key bitting in the first column. In this example the bitting is 3. The distance between the operating shear line and the control shear line is 10 increments. So we will add 10 to the control bitting, making it 13. This is now our control number. Now take the larger of the two numbers between the TMK bitting, (7) and the change key bitting (9) and subtract it from the control number (13). This number goes into the third box. This is the control pin. In figure 1, the first change key bitting is a 9, while the TMK is a 7. The larger of the numbers is 9, so it would be 13 - 9 = 4. The 4 will go into the third box next to the 9. The next change key bitting is a 1. This time it will be the 7 of the TMK that is used, giving us 13 - 7 = 6. Now we take the control number (control key bitting + 10) and subtract it from 23. Remember 23 is our total pin stack height. This number goes into the box at the top of the column. For the first column it will be 23 – 13 = 10. This is the driver pin, and will stay the same for all the bittings in each column. Now repeat the process for the rest of the columns.

If the boxes add up to 23, then you are doing well. Once the page is filled out, and the math has been double checked, then you are ready to pin up some cores.

To begin, find the bitting for the change key you are pinning to. Let’s say you need to key a core to change key AA1, and your bitting list shows the cuts are 9832721. Starting in the first column, find the 9 in the oval. Now look at the three squares next to it. The bottom square is the bottom pin, which will be a #7 bottom pin. The next square up is the master pin, which will be a #2 master pin. The third square is the control pin, which is a #4 master pin. The last pin is found in the square at the top of the column. This will be the driver pin, which is a #10 master pin.

So in the first chamber there is a 7 bottom pin, 2 master pin, 4 master pin, & a 10 driver pin. 7+2+4+10 = 23. Good to go.

Now move over to the second column and locate the number 8. The squares will show you need a 6 bottom pin, 2 master pin, another 2 master pin, and a 13 master pin. 6+2+2+13 = 23. See, 23 is the magic number. Keep going from chamber to chamber until the core is pinned.

If you have a keying system that uses a Rotating Constant progression, then some of the bittings used will be the same as the TMK. Also, you might need to pin a core to the TMK only, or to a lower master. This is where the fifth row of ovals comes into play. Look at the fifth row of ovals. The bitting for the TMK (7610509) should be in these ovals. The squares to the side are filled in the same way as the others. In the first column, the bottom square gets a 7 for the bottom pin. As there are no master pins needed, the second square will get an X. The third square will get a 6 for the control pin. So the pinning will be a 7 bottom pin, a 6 control pin, and a 10 driver pin. 7+6+10 = 23.

Now if you need to pin a core to sub-master AA, and the bitting sheet shows it is 9832509, then the first four cuts (9832) are found in the top four ovals. The last three cuts (509) are the same as the TMK and are found on the fifth row of ovals.

I have found using the speed chart very useful in my job. I keep one in my desk, for one of the keying systems that I work with on a regular basis. I can’t wait until the next time my wife tells me to clean off my desk again, so I can find another treasure.
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