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The National Locksmith®

CODES
MASTER 1-3200, PART 3
page 104

May 1995
Volume 66, No. 5

LOCKSMITH TOOLS ISSUE

**THE SECOND MONDAY
OF THIS WEEK**

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**PORTABLE, PRODUCTIVE &
PROFITABLE
— THE HPC 1200PCH**

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**IT'S ELEMENTARY
MY DEAR WATSON!**

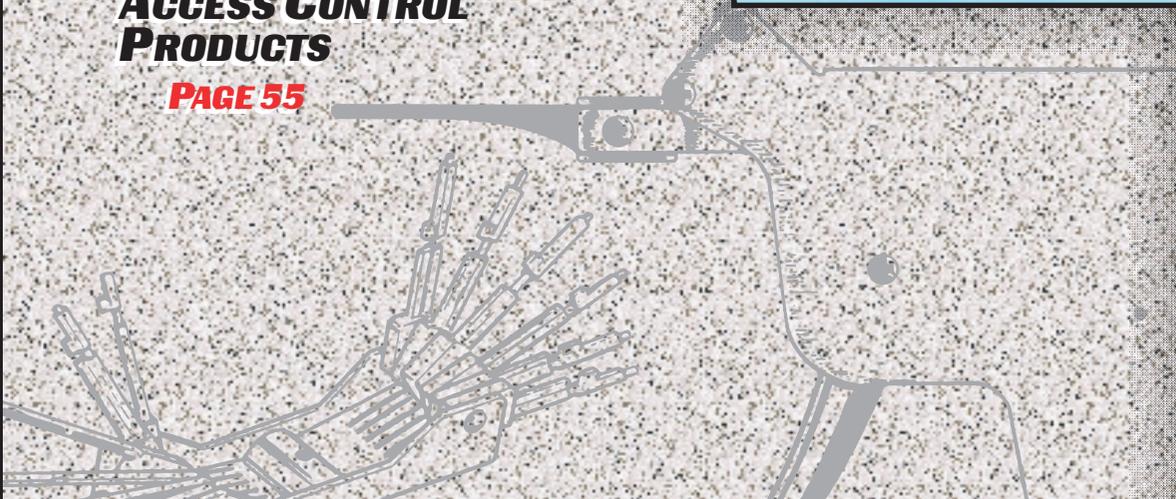
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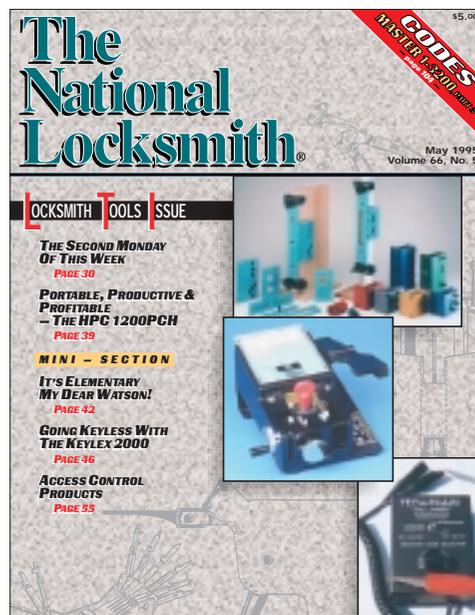
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On The Cover

Tools like those featured on our cover make locksmithing fun and profitable.



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COMMENTARY

The naked truth about my stay at the New Jersey convention

It has been good meeting and greeting lots of readers at a number of recent conventions such as TLA and NJMLA. However, at the New Jersey show, unwary locksmiths were almost "treated" to a view of me most people are fortunate never to see!



Marc Goldberg
Editor/Publisher

As I tell you this story, let me also mention that I now have a greater appreciation than ever for the poor, unfortunate victims of emergency lockouts. So next time someone calls you for a lockout, be REAL nice to them!

Having taken a side trip into NYC the night after one of the exhibit days, I found myself exhausted to the point where I didn't even want to go out to eat. So I ordered room service and hit the sack.

In the morning, I woke up and decided that the remains of last night's dinner were far too gruesome to look at, so I decided to put the tray outside the door. Now, as I had just woken up, I was in a state of, shall we say, undress. And being the modest type, I was somewhat reluctant to hide behind the door in the buff and shove the tray into the hall.

Looking around for the handiest type of garment, I spotted two within reach. One was a pair of courderoys. The second item was my pair of Mickey Mouse flannel boxers. I think you're finding out more about me than you ever intended, but bear with me, there is a purpose behind this madness.

I grabbed one of the garments, put it on, and went to slide the tray out of the room. As I did so, I heard the slam of the door and felt a *whoosh* of wind as the door slammed shut, and locked behind me.

This was not good. In fact, this was really bad. To say I was embarrassed would be something of an understatement. As I huddled in the corner of my doorway, I quickly set about considering my options.

America Online: NATL LOCK

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Use the Internet address if you are not on AOL.

The layout of the hotel was a big problem here. I realized right off I was going to have to find a house phone and call the front desk. Peering down the long (and fortunately deserted) hallway, I could see not one lousy house phone.

This was real bad news. Because I knew that the only house phone to be found on my floor was smack dab by the elevators, located right in one of the classrooms where I had been seeing dozens of locksmiths taking seminars and classes.

Can you imagine this? Your editor in a state of Csemi-undress waltzing into a class on say, Masterkeying, waving to the assembled masses, no shirt, no shoes, no socks, no....

"Hi, don't mind me guys. I just came to use the phone. By the way, I hope you all read The National Locksmith."

As I scuttled furtively down the hall on my way to the classroom, I began to mentally rehearse what I might say. Thankfully, I met no one along the way and no one was waiting for the elevators. When I threw open the classroom door, holding my breath...no one was there.

Empty!

Grabbing the house phone, I quickly dialed the front desk and requested a bellman with a key.

"No, I am NOT coming down to the desk to pickup the key," I nearly shouted into the phone. *"I really think you would prefer to send someone up here with it....NOW!"*

After the bellman let me into my room, I contemplated the garment I had not chosen, still laying on the bed.

"Well, Mickey," I said to the boxers on the bed, *"could have been worse!"*

Marc Goldberg

LETTERS

Comments, Suggestions and Criticisms

The National Locksmith is interested in your view. We do reserve the right to edit for clarity and length. Please address your comments, praise, or criticism to Editor, *The National Locksmith*, 1533 Burgundy Parkway, Streamwood, IL 60107. (Or E-mail us at the E-mail address below.)

America Online: NATL LOCK

Use the above address if you are on AOL.

Internet: natlock@aol.com

Use the Internet address if you are not on AOL.

TV Mars Locksmith Image

Dear Marc:

I am writing you in regards to what I saw on "The X Files," a television show. A woman acting as an FBI agent used a pick gun to open a deadbolt lock. This included a close-up of the gun being triggered in the lock. There was, however, no tension wrench being used. This event still caused me great concern with the extreme close-up of the pick gun and it's use. As a locksmith I take great care in not revealing my tools and the function thereof to the public.

Other TV shows have displayed criminals impressioning deposit box

keys by inserting a blank and moving it to form marks on it, and then using a duplicator to cut the blank. This is far too explicit to be shown on an episode of "McLoud."

How do the creators of these shows get this type of information and why are they able to get it and then show it on television?

I think we should do more to protect the locksmith image and apparent availability and easy access of the tools of our trade to those other than locksmiths.

Terry L. Gold
Canada

Looking For Work

Dear Marc:

I just received your February issue of *The National Locksmith* and read a letter from a reader, V. Ahshonso, who is looking for work.

In the early '70s I was a locksmith for a large hotel. Hotels have "Maintenance Engineers" on staff, and the larger ones have locksmiths in the Maintenance Engineering Department. If they are union workers, they may be in the

"Operating Engineers Union" (in the LA area it was Local 501). I hope this information is helpful to other readers looking for work. I am now a Homeowners Association & Property Manager, managing a condominium community in the Palm Springs area. I still look through the magazine as time permits. I am training one of my staff maintenance engineers to be a locksmith for our high-rise complex, which is known for it's high security. Having our own locksmith on staff adds to the security by keeping keying information in-house.

Keep up the good work.

Steven Shuey
Via E-Mail

Just Ask

Dear Marc:

Thank you for being the first (that I know of) locksmith service to be on-line. I have learned many things, and received help on many subjects since getting an Internet address. The area I have been missing is the subject of locks and locksmithing. I am pleased that this has finally been addressed. I look forward to receiving any and all news you have to offer.

At this time I would like to let you know that I am the editor of the Manitoba Locksmiths Association (MLA) newsletter, *Keystones*. We are a small organization of about 70 members. Our newsletters to date have consisted of only minutes of the last meeting. I am pleased to say that this year, due to a redefining of the executive structure of the MLA, I am able to try to expand the newsletter to include tips, swaps, and industry news provided by my local suppliers.

We would appreciate any help you can offer. Particularly with news releases regarding new products and tools. I would also like your permission to reprint past trade tips found in *The National Locksmith* as well as the news posting you sent over the Internet.

Our Condolences

Roger D. Polk, RL, of Cedar Falls, Iowa, died of cancer December 3, 1994 at Sartori Memorial Hospital in Cedar Falls. Roger was 66, and is survived by his wife Viola; three daughters, Marlene King, Linda Polk and Cindi Jo Polk; and two sons, Daniel Polk & Ken Polk.

In 1970, Roger began Polk's Locksmith Service where he worked for 23 years. Roger belonged to American Legion Post #237, was a member of Associated Locksmiths of America #3498, the Iowa Locksmith Association #1, and SAVTA.

In 1978, Roger founded the Iowa Locksmith Association and was the Association's first President. He also held other offices and served on committees. Roger was active in Locksmithing and instructed classes for ILA and other Locksmith associations.

Roger had a love for people. As a member of ILA he initiated a plan where the Locksmith would save all their scrap brass, the proceeds from the sales of this brass was donated to three State Mental Hospitals for the forgotten people. The ILA has named this fund The Roger Polk Memorial in his memory.

Kenneth R. Novey, RL
Director ILA

Submissions of any sort can be addressed to me by my Internet address. Thank you again for bringing the locksmith into the on-line community, and the best of luck in this new and exciting project.

Hugh Pritchard
hugh.pritchard@WPCUsrGrp.MB.CA
Via E-Mail

Editor's Note:

Hugh, We welcome Locksmith Associations' need for our material and articles. We also encourage the reprinting in association newsletters of any useful information obtained from The National Locksmith. All we ask is that "Reprinted from The National Locksmith" appear with the information used.

GM Code

Dear Marc:

Tom Seroogy's answer to Merlin Tyler's inquiry about GM codes was way off the mark. (*The National Locksmith*, February 1995, Shop Talk.) My 23 years of working on GM ignitions has taught me that although D39J0 is not a GM code, 39J0 is.

If you look at a GM ignition where the code is stamped, the code 39J0 would be stamped as 39 then a space

them J0. These characters are usually printed to the right of the plug retainer. Usually, to the left of the retainer, a letter is stamped (don't ask me why) and in such a spacing so as to make someone less experienced believe it to be part of the code. You might try for a retraction, soon, as I see egg on your collective faces.

David A. Keenan, CRL
Vermont

Editor's Note:

You're right, David, codes found on GM ignition locks often appear as your describe. My response to Mr. Tyler's question, however, involved more information than we included in the question, changing its context. For this I apologize.

As for wiping the egg off our collective faces - the difference between coaching and criticism is your attitude. With your experience in locksmithing we appreciate your coaching.

ADA Reprints

Dear Marc:

I have a question regarding your Commentary in February issue of *The National Locksmith* pertaining to the section on "Copying the ADA Regulations." My question is-

including copying the article word for word, can I also have it published in my hometown newspaper?

I need to know if you would permit me to do this because of copyrighted information.

MasterLock
Via E-Mail

Editor's Note:

Go right ahead and reprint the ADA article for your customers. Carefully rename the article and take it to a print shop! That's what it's for!

Superhighway User

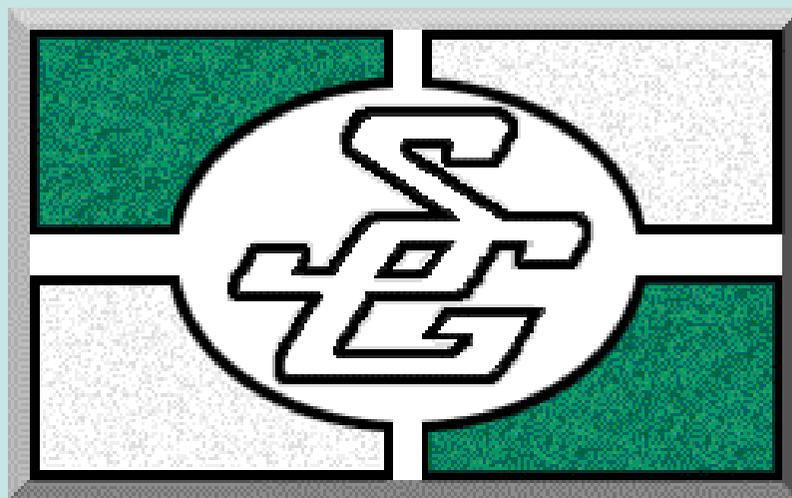
Dear Marc:

I just wanted to tell you how happy I am that you are making use of the "Superhighway." Please add my name/address to your database.

I consider this service to be a valuable asset to your magazine and am anxious to see how this will help the industry now and in the future. If I can be of service in some way, please let me know. I am not a "circuit-head," but I have lots of fun with computers and use them extensively in my day-to-day operations.

I hope to hear from you soon.

Les Moyer
Via E-Mail



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ROADSIDE ASSISTANCE

**Locksmiths
are now invited
to join
Ford Motor
Company's Roadside
Assistance program.**

The Ford Way

Here's the details from Ford Vice President, Jim Hurst.

by Jake Jakubowski

Beginning with the 1994 model year, Ford Motor Company instituted a customer help line through The Ford Auto Club. The purpose is to aid Ford, Lincoln and Mercury owners in the event of mechanical problems through the utilization of a toll-free telephone number. This improved and expanded service for Ford Motor Company customers will now include lock-out and lost key service.

When I discussed Ford's expanded customer service program with a contact at a local Ford dealer, I was told that when the local dealer received a call from a Ford Motor Company automobile owner, the dealer was required to refer the customer to the Auto Club before a service provider would be dispatched.

That included lock-out service and key generation in the event of lost keys. In other words, regardless of the customer's needs, those needs would have to be directly addressed by the Auto Club before anyone was allowed to perform service on the vehicle. Otherwise, there might be a conflict regarding the warranty on the automobile.

Endeavoring to find out more about Ford's new service and to find out how locksmiths can become a part of this new service network, I spoke with Jim Hurst, Ford's Vice President of Quality Assurance.

Mr. Hurst, to clarify the extent of Ford's expanded roadside assistance program for The National Locksmith readers, would you mind reviewing the scope of the roadside services being offered Ford product owners?

Ford took a giant step in 1994 with the introduction of a roadside assistance program that not only covers all cars and light trucks, but also covered non-warranty items such as lock-out, jump start, tire change and fuel delivery for 36 months or 36,000 miles. No other manufacturer's

roadside program offered such a wide range of services.

Obviously, our readers are primarily interested in the lockout/lost key aspects of this program more than the other service features. With that in mind, can you comment on Ford's position that no service be performed without the provider first being approved by the Auto Club?

When a Ford customer buys a new vehicle, their warranty card has our toll-free number on the back. Customers can call that number from anywhere in the U.S. and Canada, any time of the day or night, and we'll send help.

Ford has provided a very easy and efficient method of providing service. Also, by routing the call through the Ford Roadside Assistance number, we are able to provide reports to Ford that contain information on early detection of product concerns. Another benefit is that we can administer a consistent set of standards for service providers. Our goal is for customers to receive a

consistently high quality of service no matter where they are.

How would a locksmith that is interested in participating in Ford's Roadside Assistance program go about registering with the Auto Club?

Locksmiths that are interested in becoming part of our network can call 800-999-1218, Ext. 420. A voice mail message will provide an opportunity to leave a name and number

Are there any special qualifications required by Ford before they will accept a locksmith as a service provider?

They must meet certain bonding requirements or have an acceptable amount of liability insurance, provide service 24 hours a day, 7 days a week, provide clean equipment that has the name of the company identified, and preferably a service technician who has a uniform or other professional looking attire which identifies the company.

Mr. Hurst, once Ford accepts a locksmith as a service provider, does Ford set the rates it will pay for each type of service performed by the locksmith, or does Ford pay the prevailing and customary rate for a given locality.

We negotiate rates based on the ability of the company to meet the requirements I just mentioned, plus the area to be covered, plus the competitive rates in that particular market area.

How would the locksmith be contacted to perform work and what would be required of the locksmith in the way of paper work relating to the service performed?

When we receive a call from a customer, we locate one of our locksmiths in the area, call that locksmith, give them the basic information about the call and ask for an ETA and their approximate distance to the vehicle.

We inform the customer of the name of the company we are sending



Jim Hurst, Ford Motor Company's Vice President of Quality Assurance.

and the ETA. Once the service is performed, the locksmith can submit the bill for payment on their company invoice.

What would the locksmith's responsibilities be if they were contacted directly by the customer?

If a customer wishes to arrange their own service, they must pay the locksmith and submit the invoice to us for reimbursement.

How would the locksmith be paid for the services that they render under Ford's Roadside Assistance program. Are they paid by the owner, the dealership or directly by the Ford Motor Club.

We have certain billing procedures that we like our contractors to follow; but basically, we ask that they itemize the charges on their own invoices, including the P.O. number we give them when we dispatch the call, and submit the bill to us.

Can you give me an estimate of the turnaround time from the point that the locksmith provides the service to the customer and the time that locksmith would be paid?

The locksmith would be reimbursed within 30 days of our receipt of the invoice.

Thank you for your time, Mr. Hurst. Is there anything else that you'd like to add to the foregoing?

I would just like to take this opportunity to thank the people out there who provide service for us today. We receive hundreds of survey cards each month from customers who tell us what a great job those folks do and we appreciate it very much. To provide such a high level of service takes a team effort, and we're proud to have them on our team. **TNL**

Just for laughs

***Sign in a car on an out-of-the way street:
"Attention car thieves--this car is already stolen."***

***Sign in another car:
"Be right back... gone for gas."***

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RE THINK RE LOCKERS

*The great nemesis of safemen everywhere
is the presence of relockers.
Follow Dale's easy solution to one hard to solve opening.*

A lot of new, as well as old safemen and women sometimes jump to conclusions. Instead of thinking things through, they may jump to the wrong inference, which at times will have disastrous results, not the least of which is time wasted and wrong holes drilled, not to mention wasted drill bits.



by
Dale Libby

The great nemesis of safemen everywhere is the presence of relockers. Relockers, when I was learning about them 30 years ago were broken down into two main categories:

1. Relocking devices
2. Relocking triggers

The main difference between them is where they are located. A relocking trigger is located within the combination lock case. A relocking device is located outside of the combination lock body, but is activated when the combination lock, dial, cam plate, or other part of the safe lock mechanism is punched or broken.

Mosler has a relocking trigger pin on their 302-402 locks that can be activated by punching off the back cover plate via the dial spindle. This pin is spring activated and blocks the movement of the combination lock bolt. This same trigger pin is activated by applying heat to the lock case by means of a torch. The pin detent is nested in a low heat solder that melts

and sets off the relocker.

LaGard's version of the relocking trigger is a bent piece of spring steel within the lock. The back cover holds this "A" shaped relocker in place until the rear cover is removed.

Sargent & Greenleaf locks use a lever shaped relock trigger lever in their newer locks, and a relock pin in their older locks. Again, knocking off the back cover of the lock by punching will activate these levers and pins.

Other safe lock manufacturers have similar set ups within the lock case. When activated, these relockers (triggers) block the movement of the combination lock bolt.

There are different approaches and tools to use to de-activate these triggers, but that is not the thrust of this article. We are in a diagnosing mode at the present.

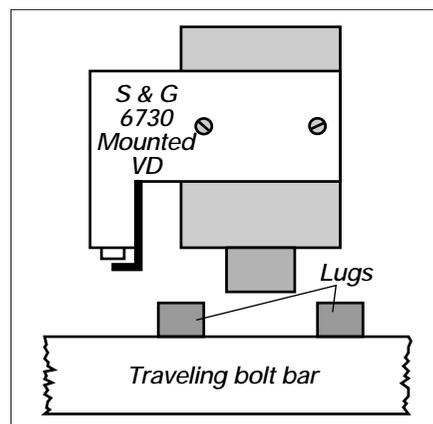
Now, relocking devices are usually

activated when the combination lock back cover is knocked off. Newer versions react when the cam plate or other vulnerable parts of the lock are punched. Relocking devices located outside the combination lock work on parts of the safe locking mechanism. They may block movement of the main bolt or other remote bolts. They may fire into the side of the door to block opening, or they may hook the opening cam plate, a method found on a lot of Mosler products.

However they work, they are nasty to deactivate and diabolical in principal and principle. The one thing they have in common is that they are used by safemen to scare the customer whenever they face a problem that is not easily diagnosed. Stating that a relocker is set off is like telling a customers "I could not pick your ordinary lock because of mushroom pins." Some safemen look forward to a set relocker because it imparts a challenge to the routine safe opening. In fact, I know one safeman in California that goes out of his way to set off relockers to make the safe opening more of a challenge.

Here is an example from a recent safe opening that I was called on to assist. The American Locksmith (Steve Stegel) called and said that he had a safe with a set relocker. The combination worked fine but the safe handle would not open. The safe was labeled "Corporate," and thus I did not have any idea what I would see.

Something was definitely wrong with this safe. The combination worked correctly. The lever dropped in at approximately 5 and the dial stopped at 94 on this S&G dial and



1. The back view of the S&G lock, the bolt bar and lugs. The back plate on the lock is held in place by two cover screws.

lock. By the movement of the dial after drop-in, it was apparent the relocking trigger within the lock was not set.

A common diagnostic tool when ascertaining whether a relocker trigger is set off is the movement of the dial after the lever has dropped into the gates. This can be felt. The distance the dial moves when withdrawing the combination lock bolt is usually between 10 to 14 numbers. This can be perceived quite easily. Usually the customer will have the drop in position as a number of the combination. 24-69-36-95 is an example, where the 95 is actually the stop position of the dial, and not a combination number.

When a relocking trigger is set off, however, the dial will only move three to five numbers after drop-in. The relocking trigger is stopping the movement of both the bolt and the dial. This is true on all modern locks where the relocking trigger has been activated. Thus, it is quite easy to determine if the trigger is blocking the movement of the bolt and dial.

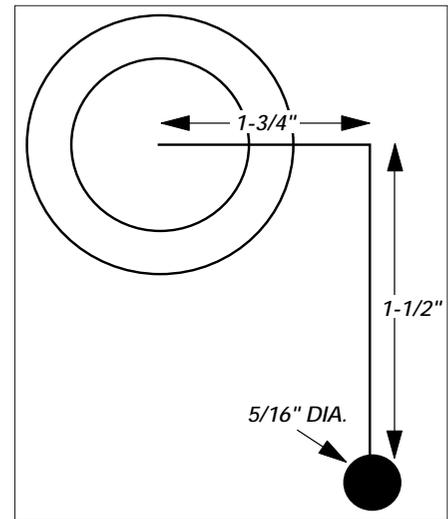
On this safe the dial moved about 11 numbers. It sounded good and felt

good, but the handle would not budge. This safe was a double door type with a small door above a lower full sized door. Both doors used the same lock and handle configuration. We took the upper door apart to view and measure for the relocking device.

Both the S&G lock and the relocker trigger were mounted Vertical Down (VD) with the relocker to the right of the combination lock body. The bolt and the activated trigger would act on the bolt bar right below the lock. (See illustration 1.) The configuration is like the Gary relocker placement with the relocker to the right as opposed to the left of the lock.

The relocker detent was the "Double duty" type of relocker with the plate holding the relocker back directly attached to the back cover of the combination lock by the longer cover plate screws. This type of configuration did tell me one thing.

If the relocking trigger was not set off, then the likelihood of the relocking device being set off was nil. There was a possibility that one of the cover screws had come out and had let the relocker cover detent move



2. After making the correct measurements and drilling a hole, we could see the inside of the safe. Strangely, everything seem copasetic except for the fact that the door would not open.

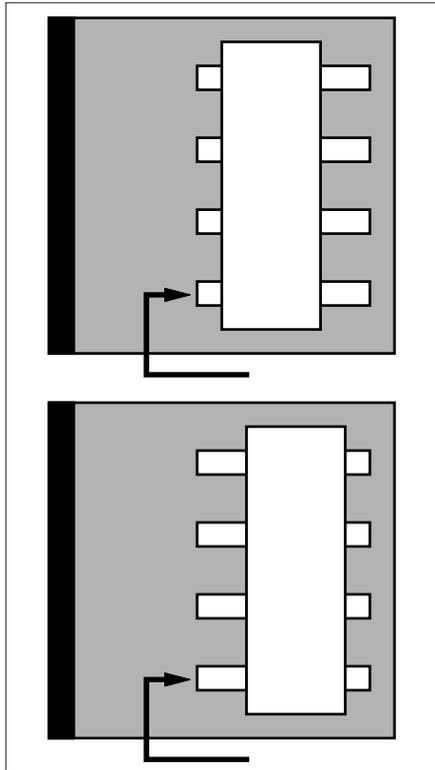
enough to set it off without setting off the internal trigger, but I thought this highly unlikely. The safe was still locked, so it was necessary to drill an exploratory hole to see what was going on.

By carefully measuring the upper door lock we came up with the

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3. The bolts showing the locked position (top) and opened position. A cash drawer lid having had fallen in back of the locked bolts, not allowing their retraction for opening the safe.

following drill point measurements for deactivating the relocker: 1-3/4" to the right of the dial and 2-1/2" down. This point is about 6-7/8" from the edge of the door. The dial center is 5-1/8" from the edge of the door. (See illustration 2.)

The 5/16" hole was drilled without encountering any hardplate. Also, when the hole was drilled, we could only see the bottom of the relock plunger. This was because the relocker had not been set off. With my borescope I could see the combination lock bolt clear the lock bolt blocking plate on the active bar. Nothing seemed to be keeping this safe locked, but it was secured.

The door rattled in and out easily, so there was no bank bag putting pressure on the door. I again looked at the smaller top door, and the Lightbulb of Insight went off. The upper door had two bolts. The lower door must have four or five active bolts. These bolts were through bolts, in that when they were withdrawn, they went through the lock case parallel to the door. (See illustration 3.) I correctly figured that something was blocking one or more of these bolts from moving, and that the lock

mechanism was not part of the problem.

I attached a large pair of vice grip type pliers to the outside "T" bolt handle and gently rocked the handle back and forth. Each time I rocked it, it moved a little more until the door opened. The culprit was a large cash register change door that had dropped and wedged itself behind the lower lock bolt. This must have happened when the door was closed the night before. I figure that the door wedged the drawer up, and when the bolts were thrown to lock the door, the drawer dropped down and blocked it.

We explained to the customer the problem and how they could avoid the same problem in the future by making sure that all cash drawers and all bank bags are put as far back as possible from the face of the door. We plugged our relocker viewing hole and left, happier and wiser.

In conclusion, try to diagnose the lock problem before starting. If the main lock works and there are other relockers, be suspect that the problem is really a relocker predicament. OPEN, RELOCK, and PROSPER!



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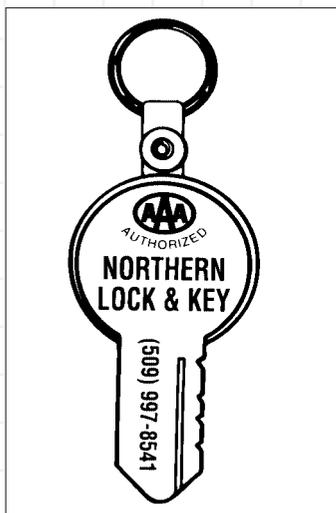
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GT-85 Lock Lubricant

GT-85 International's ozone-friendly maintenance spray is a protective penetrating lubricant and water displacer which will not freeze. GT-85 contains DuPont Teflon, which forms a non stick, anti-corrosive film when GT-85 is applied to various surfaces. The film remains intact and provides long-term protection against further sticking or seizure of moving parts, and also



protects against further water penetration. It lubricates and protects any moving metal part, silencing damaging and irritating squeaks, and frees rusted and corroded parts. It protects, lubricates, insulates, penetrates and dries, leaving no residue. It can be used on locks, hinges, electronic security systems, magnetic contacts, power doors and sliding assemblies.

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NanoLox-I By Nanotechnology

Incorporating a Schlage Series D Model Rhodes lockset, the NanoLox-I push-button Electronic Access Control system operates without batteries. It features 125, 253, 509 or 1,021 user-programmable, variable-



length codes. It is maintenance free - no need for a battery or external wiring. Other features include a lock-out mode after four unsuccessful trials and key override.

For **FREE** Information
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Cor-Tech Patio Door Lock

The patented Cor-Tech patio door lock can be pushed into the locked position or opened with just one hand. In the locked position, with a simple push of the button, individuals can



open a door to its 4" opening to let in fresh air or let pets in or out without unlocking the door. In the open position, the locking bar folds away to its mounting, allowing the patio door to open and close normally to within 3" of the door frame. The lock adjusts to fit all standard doors, is easy for a child to use and is handicap accessible. Cor-Tech locks are available in coordinator colors from Cor-Tech Manufacturing, Inc.

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Circle 329 on Rapid Reply

Winchester™ Legacy Gun Safe

The new Winchester™ Legacy Series of gun safes combines the quality of the finest-made safes on the market with affordable prices.



All Winchester Legacy Safes have received U.L.'s Residential Security Container rating.

Available in three models, all Winchester Legacy safes stand 60" tall and come in black, burgundy, blue and green. The Winchester name is placed near the top and the horse-and-rider emblem at the bottom of the door. Interiors are padded and covered with saddle-tan velour.

The body is made of 10-gauge steel with a 3/16"-thick door. Five case-hardened, 1"-diameter bolts are set in the door side. There's also an internal vertical interlock bar that runs the length of the door and performs like a dead bolt.

Winchester Legacy Safes also come with UL-approved Group II Sargent & Greenleaf locks with an internal relocker that trips to defend against drilling or punching. Winchester Safes are made in America by the Meilink Safe Company and comes with a lifetime warranty.

For **FREE** Information
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Tru Hone Sharpener

The Tru Hone knife sharpener is a portable unit weighing only 20 pounds. It grinds both bevels simultaneously and does it quicker and more safely than a belt sharpener or stone. A built-in knife-blade enclosure en-



cases the knife's cutting edge as it is guided between the honing wheels. After repeated Tru Hone sharpenings, the blade edge remains perfectly straight, not concave like the results of many hand sharpenings. The Tru Hone can easily be adjusted for different bevels allowing you to tailor your knives for any type of cutting operation.

For **FREE** Information
Circle 331 on Rapid Reply

Weslock National's ADA Lever

Weslock National, Inc. expands its existing lockset product line with the introduction of the new 600 Series Keyed Access Lever, a cylindrical designed locking system lever with a lifetime



mechanical warranty. The heavy residential quality, 20-minute UL rated Keyed Access Lever meets all specifications of the American with Disabilities Act (ADA) and uses and industry standard door prep installa-

tion (2-1/8" cross hole and 1" edge hole).

For **FREE** Information
Circle 332 on Rapid Reply

Modular Vault Installation By Lockmasters

Modular vault construction is the way of the future! Learn what it takes to get started in the installation of modular vaults through Lockmasters® reference manual and video tape.



The manual includes banking and government regulations that pertain to modular vaults, U.L. specifications, equipment lists for starting an installation business, vault panel comparisons, vault product manufacturer's guide.

The video includes actual footage of modular vault construction with concrete panels.

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Circle 333 on Rapid Reply

DoorKing Adds History Buffer To Entry System

DoorKing has added a transaction history buffer to its popular Model 1815 PC programmable telephone entry system. The 1815 is designed with user friendly features and is programmed remotely from a personal computer by using the



DoorKing Remote Account Manager software and a modem. Now, users may upload all transactions at the entry system directly to their PC for analysis.

The history buffer in the 1815 will store up to 5000 transactions, and will indicate if access was granted or denied by phone entry, card entry, or PIN entry, and the time and date of the transaction. The transactions can be recalled and displayed on the computer screen, saved on the computer's hard disk for later analysis, or printed on the users printer.

For **FREE** Information
Circle 335 on Rapid Reply

DynaLock 3005 Series Electromagnet

DynaLock introduces its new #3005 Series electromagnetic lock with built-in exit sensor.

The #3005 lock features 1500 pounds holding force, selectable patterns of detection and adjustable time delay up to 60 seconds.



A redundant "Push to Exit" switch is built into the bottom of the lock housing for emergency override capability.

A choice of satin aluminum, or optional dark bronze finish is available.

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Trace Inverter

A Trace inverter provides strong, consistent power to run the equipment when you're out on the road. A Trace inverter hooks up to your van or truck battery and silently converts DC current to AC (120 volt) enabling you to power your tools, equipment and lighting anywhere, anytime. Trace Inverters are



designed to protect your equipment against common problems like overloading the output or low input voltages caused by discharged batteries.

For **FREE** Information
Circle 337 on Rapid Reply

New Signature Series From Sargent

The cylinder and key blank of the new Signature Series from Sargent offers unprecedented key control protection and is easily installed into new and most existing Sargent master key systems.

The unique "signature" of the Signature Series key and lock system is achieved by way of special machining of Sargent's standard key blanks, cylinder barrels/plugs and cylinder bodies.



The interaction of these components combined with the cylinder's master key pinning configuration and key blanks, provide three separate locking points within the cylinder. The cylinder barrel can rotate to operate the lock only when these three, complex locking configurations are correctly synchronized.

For **FREE** Information
Circle 338 on Rapid Reply





GENERAL SECURITY

Test Article #85

ASSA Twin 6000

by Giles Kalvelage

ASSA is a well established Swedish company which has been in business since the early 1800's and the U.S. Locksmith market has become well acquainted with their products - especially in their high security locks. ASSA manufactures their own line of locks as well as replacement high security cylinders for commercial and industrial quality U.S. made locksets and deadbolts. ASSA's high security lock cylinders are known as the Twin 6000. (See photograph 1.)

Incorporating a double locking system, ASSA's Twin 6000 cylinders utilize a second line of five pins,

known as side pins, to operate a sidebar. These pins are located to the side of the key broaching at the bottom of the plug. Side pins must be raised to a specific height to allow the sidebar to retract into the plug when the key is turned. Conventional pin tumblers operate a conventional shear line on top of the plug. (See photograph 2.)

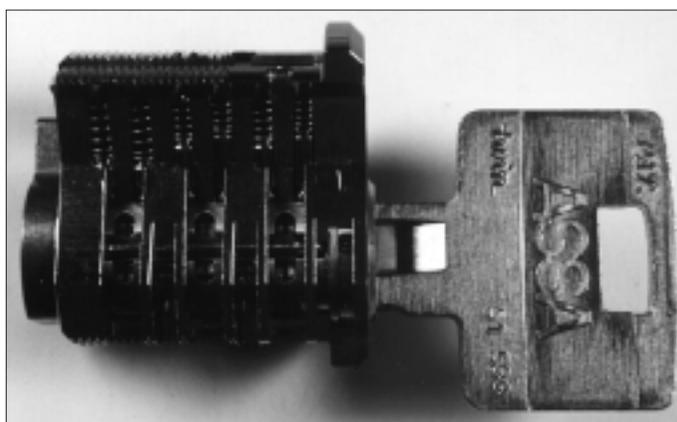
The side pins are positioned by a sidebar milling on the side of the key. Sidebar millings are cut on key blanks at the factory, requiring the locksmith to cut only the conventional pin tumbler cuts on blade of the key. No "special" key machine is required to originate or duplicate the pin tumbler cuts, but the use of a high quality code machine is best for originating keys. A

high quality duplicator can be used for duplicating keys. (See photograph 3.)

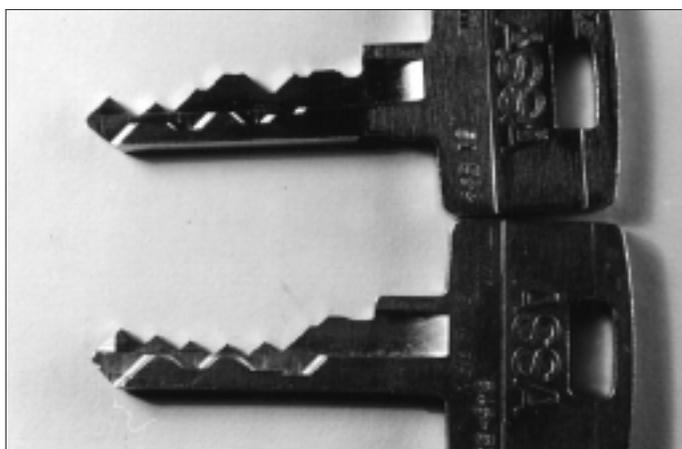
ASSA provides various levels of key control, through the use of patented side millings on the key, that are distributed through channels according to security level. Security levels are primarily designed for key control with the lowest lever being available for general purchase and the highest being a key restricted to the use of a single individual or entity. Each side milling is considered a key profile. Because the key profile and the sidebar are related, and the sidebar is symmetrical, two key profiles are available for each security level purchase agreement. Cylinder combinations may be changed simply



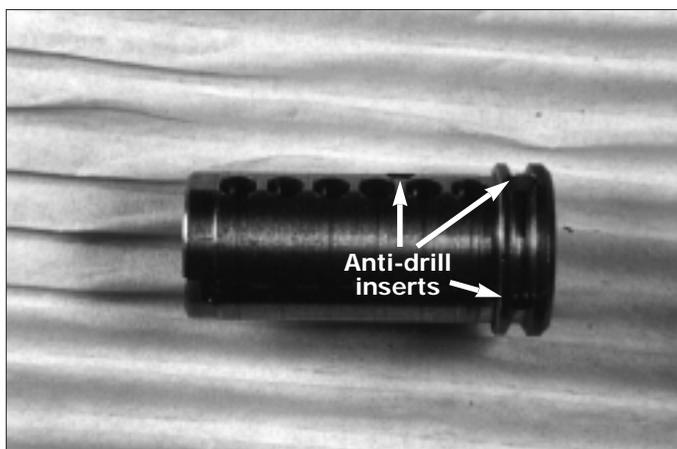
1. The ASSA high security mortise cylinder.



2. A cutaway view of the ASSA cylinder with key inserted and sidebar visible.



3. ASSA keys feature a side milling that are cut by the factory and control the side pins and sidebar. The standard cuts on the key can be cut by the locksmith.



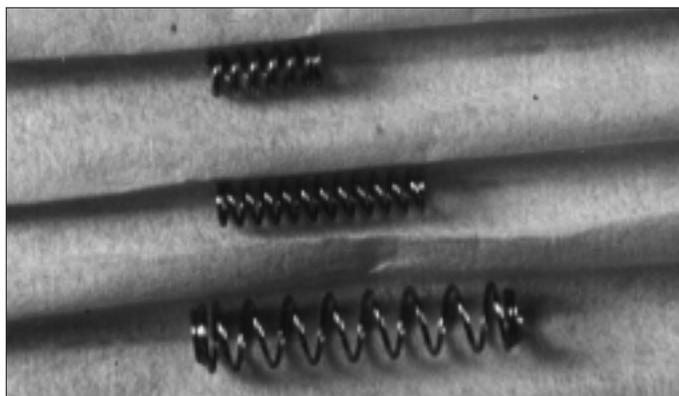
4. Drill resistant inserts, counter milled chambers and spool driver pins are part of making this a high security cylinder.



Continued from page 18



5. Closing up the back of the lock makes surreptitious entry through the keyway very difficult.



6. From top to bottom: Sidebar spring, side pin spring, and standard pin spring.



7. Loading the side pins.



8. Load the sidebar springs and the side bar.

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by rotating the side bar and cutting the same conventional code on the "sister" keyblank with the symmetrical profile.

ASSA protects the cylinder's sidebar and pins with drill resistant inserts. Counter milling in five of six of its conventional chambers in concert with spool driver pins resist picking attempts. (See photograph 4.) Drill resistant inserts, along with the dual locking system, meet the high security cylinder standards for UL 437. The cams on mortise cylinders are closed, meaning a bent piece of spring steel cannot simply be passed through the keyway and turned, retracting the mechanism of the lockset itself. (See photograph 5.)

"If a man empties his purse into his head, no man can take it away from him. An investment in knowledge always pays the best interest."
— Benjamin Franklin



9. Load the conventional pins.

ASSA Twin 6000 Specifications

Cutter: HPC 1200 : CW32MC
Framon 90 Degree
w/.032" flat

HPC Code Card: CEX1
SPACING: Tip to Bow
Shoulder to 6th cut: .2638"
Cut to Cut: .1496"

MACS: 5
DEPTHS:
1- 0.1587"
2- 0.1823"
3- 0.2059"
4- 0.2295"
5- 0.2531"
6- 0.2768"
7- 0.3004"
8- 0.324"
9- 0.3476"

Pinning the conventional portion of the lock cylinder is standard. The conventional pins of the Twin 6000 are the same pins as used in their conventional ASSA 600 cylinders.

The ASSA 600 (a non-sidebar lock) and Twin 6000 may require an adjustment in thinking for U.S. locksmiths. There are only nine depths, the deepest depth being a #1 cut and the shallowest depth a #9 cut. Spacing positions, though measured from the shoulder, are listed tip to bow. Finally, the bottom pin diameter is .114", with an increment of .024". Although .115" diameter pins will work in the lock, the factory suggests the use of original ASSA pins for durability and ease of operation. Top pins are spool shaped, measure .113" diameter, and available in four sizes listed A, B, C, and D.

Twin 6000 locks require five side pins to operate the sidebar. The ASSA

Twin 6000 side bar is roughly .909" long and is "unique" to its "double code." All side pins are identical. The side pins are serrated, but only one serration is deep enough to allow a slot in the side bar to enter the side pin. The remaining serrations help thwart picking attempts.

The "true" serration of the side pins are aligned to the proper sidebar code by the side milling in the key. While most sidebar codes remain unused, there are 3125 theoretical combinations available, with only about 2800 considered usable.

Sidebar are distributed per the key side millings of the appropriate key milling profile. The sidebar is machined to its own two codes. An ASSA Twin sidebar can be reversed to allow the "opposite" symmetrical sidebar milling to operate. Thus, a single sidebar is good for two different combinations, and a cylinder can be rekeyed without changing the conventional tumblers' code.

Driver pins are spool shaped and sized according to its pin stack. The drivers are designated A for pin stacks of 1-2, B for pin stacks of 3-4, C for pin stacks of 5-6, and D for pin stacks of 7, 8, and 9. The longest pin stacks get the shortest drivers.

Spring size is also important. Sidebar springs are the smallest, almost too tiny to pick up with your fingers. Side pin springs are small, but handle easily. Tumbler springs are the size we're all accustomed to handle. (See photograph 6.)

Cylinder Assembly

1.) Turn the plug upside down and carefully load side pin springs.

2.) Insert side pins over the springs. The pins are cupped on the end that contacts the springs. As each side pin is loaded, insert the key to hold the pin in place. (See photograph 7.) Our purpose for inserting a key into the plug is to retain the side pins inside the plug during the remainder of the rekeying process.

NOTE: Because the bottom stack height may extend beyond the height of the shearline on a master key

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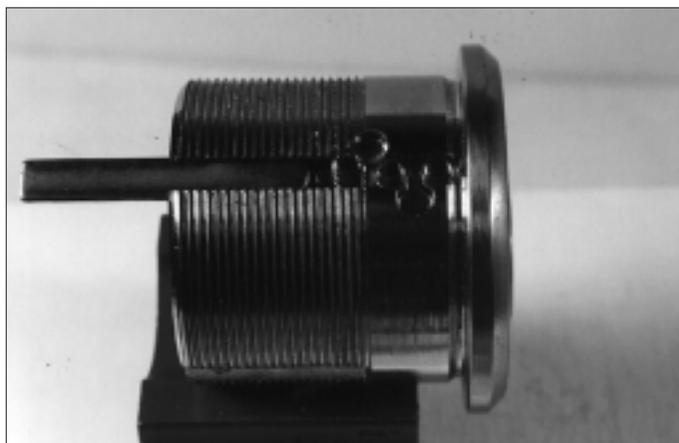


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10. When loading from the top, load the drivers with the spool down.



11. Insert the springs and slide the retainer into place.

system, it may be advisable to cut a key with all conventional cuts to a 1 (deepest) cut in all positions. This key can then be kept as a "keying" tool for future projects.

3.) On the side of the plug, insert side bar springs at each end of the sidebar groove. Insert the sidebar. The ASSA Twin 6000 side bar must be inserted per the proper key or the sidebar will not seat properly. (See photograph 8.)

4.) Holding the sidebar in with your fingers, turn the plug rightside up. Load the conventional pins according

to normal standards. It may be easier to insert the plug into a plug holder while loading the conventional pins - especially if the driver pins have not yet been loaded into the shell and the driver pins are not top loaded. (See photograph 9.)

5.) Load the driver pins. While driver pins may be loaded using a plug follower, ASSA makes it easy to top load the pins. After inserting the combined plug into the shell, load the driver pins, spool down. (See photograph 10.) Insert the tumbler springs and slide the spring retaining

slide over the shell. (See photograph 11.)

The slide stays in place and usually does not require staking. This makes loading the driver pins easier. It can also make rekeying simple if the same side bar code is used. Simply slide off the spring retaining slide, turn the cylinder upside down, dump the conventional tumblers and springs and recombine without removing the tailpiece or plug. **TRM**



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AUTOMOTIVE SECURITY

Test Article #86

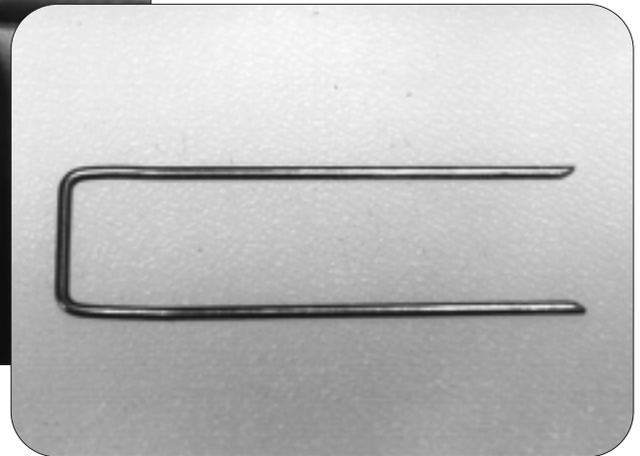
Mercedes 190E

by Michael Hyde

Last year in October, November and December I wrote about the Mercedes SL600. This month we take a look at the Mercedes 190E, with factory alarm. Due to the purchase price there are a lot more 190Es out there than SL600s. The key for this model has 13 cuts on a two-track high security keyway.



1. After turning the key to the first accessory position, insert this U-shaped wire into the two holes of the lock facecap.



Opening Tip

I have had good luck opening these cars by using a Lemon Pop or similar device. I carefully wedge the side of the window frame and slip in the flat plastic tool with string or rubber hook and slide it around the vertical button to lift up. Because this car uses a vacuum air system to lock or unlock the doors and trunk, it is necessary to maintain a steady upward pressure on the button to unlock the door. When you open the door the alarm should sound.

Ignition Lock

The ignition cylinder is held into the ignition steering lock housing by a hardened steel black cover or bezel. To remove the cylinder, you should first remove an outer trim ring that fits around the lock and bezel.

Next, insert a working key and turn to the first accessory position. Insert a small double-ended wire, with angled

tips, into the two holes on the face of the ignition. (See photograph 1.) It is important to fully seat the wire as

According to a survey, for white households, motor vehicle theft rates were highest in central cities and lowest in nonmetropolitan areas.

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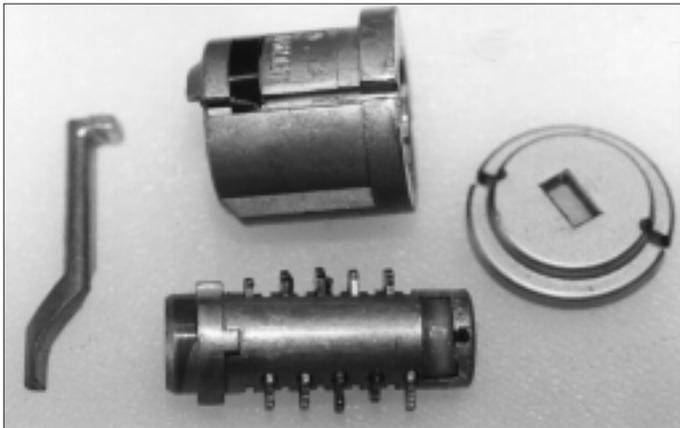
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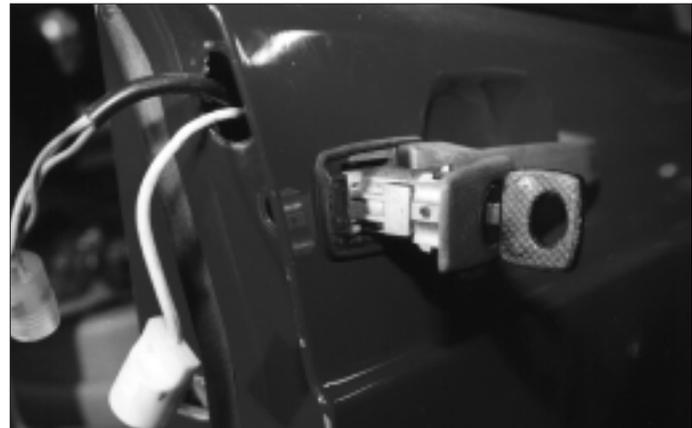
2. A properly inserted wire.



3. The facecap is held in place by a single roll pin.



4. A disassembled ignition lock.



5. Removing the handle to retrieve the door lock.

it has to lock into the locking cams in the lock housing to release the bezel. While pushing in on the wire tool pull outward on the key to remove the cylinder and bezel. (See photograph 2.)

The ignition cylinder has a hardened facecap that is held to the plug by a single roll pin. (See photograph 3.) It can be extremely difficult to remove this pin without damaging something. Usually the cylinder is replaced with a randomly coded one (sometimes called a workshop version) and then a

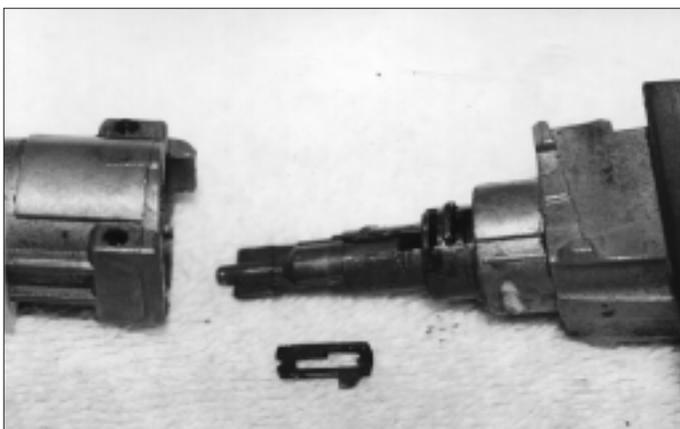
replacement cylinder, coded to the car, can be ordered from the dealer.

There are a few different ways to remove the facecap, the first being to gently pry the opposite side of the cap from the roll pin until the cap shears the roll pin. Another possible way is to use a Dremel tool to cut the area around the roll pin. Once enough material is removed the roll pin can be pulled out. Once again, this procedure is not recommended. You could go to the dealer and get a randomly coded version and key the rest of the car to the new ignition cylinder.

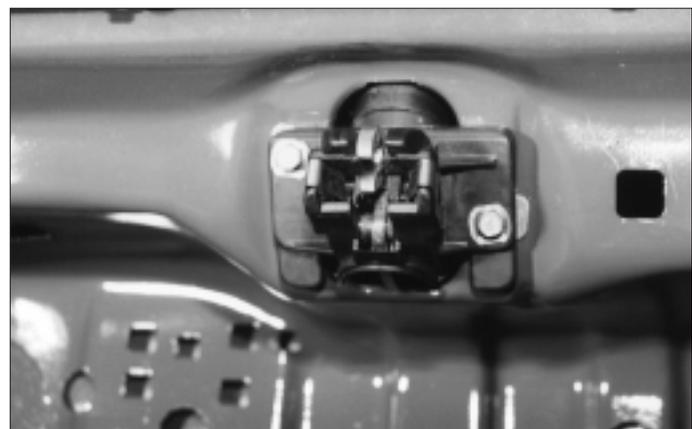
The ignition cylinder contains tumblers in position 1 through 10. (See photograph 4.)

Door Lock

The door cylinder and the handle appear to be a one piece unit. The cylinder can be separated by opening the door and removing the small black plastic cap, located on the side of the door body near the handle. Inside that hole is a 4mm Allen screw. Remove the screw. Since this car is equipped with a factory alarm you must uncouple the alarm connection. To do this remove the large black plastic cap



6. Removing the door lock from the handle.



7. The 190E trunk lock is held in by two 10mm bolts.



8. The disassembled trunk lock.

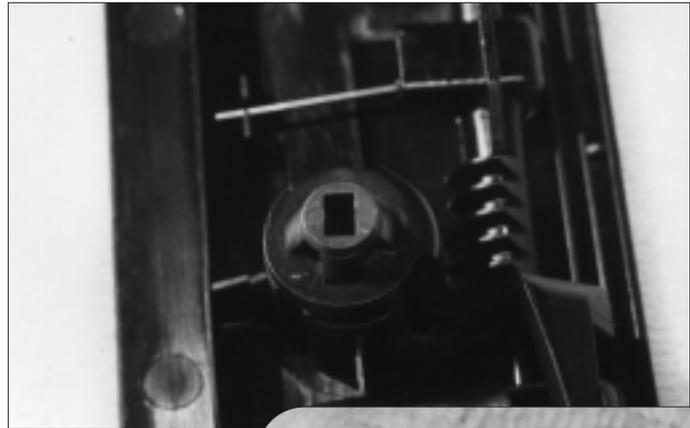
located above the Allen screw hole and separate the connectors.

To remove the cylinder, insert the working key and rotate to gently remove the cylinder. This will take a little pulling, back and forth as the cylinder is held tightly in place with the handle assembly. Remember to take your time and be gentle with the removal of the cylinder. (See photograph 5.)

The tailpiece of the door cylinder has a wing tip on it that fits into a plastic cam that works with the latching assembly. Because of the

opening in the cam, the wing tip of the tailpiece is interlocked into the cam. That is why it is necessary to rotate the cylinder with the key in order to remove the door cylinder.

The door cylinder has an alarm switch connection on it. To disassemble the cylinder, insert the key into the cylinder. Remove the two tension roll pins by tapping them through the lock housing with a pin punch. Separate the front section of



9. The glove box lock is made of plastic and is extremely fragile, and must be removed for lock disassembly.



the housing from the rear section. Rotate the key to remove the plug from the forward section of the



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housing. The door cylinder contains tumblers in positions 2 through 13. (See photograph 6.)

Trunk Lock

Most Mercedes trunk locks are located in body of the trunk panel, whereas on the 190E the trunk lock is in the deck lid itself and is held in place by two 10mm bolts. Remove the bolts and then disconnect the linkage rod by unscrewing the Phillips screw that holds it in place. (See photograph 7.)

To recode the cylinder you must remove the front plastic trim section

of the lock housing by gently prying it apart. Next, remove the E-clip on the back of the lock. Be careful as the lock cylinder is under spring pressure. The lock cylinder will now slide out. Insert the working key and rotate it to remove the plug. Be careful as there is a small spring and ball-bearing that may fly out. The trunk cylinder contains tumblers in positions 1 through 12. (See photograph 8.)

Glove Box Lock

To remove the glove box lock cylinder it is necessary to remove the cam on the back side of the cylinder plug. The cam is made of plastic and



10. The glove box plug.

has four small brittle posts that hold the plug in place. (See photograph 9.)

It will be necessary to use small pieces of metal (like lock picking tension tools) to gently wedge between the posts and then slide the plug out. The posts can break easily, so take extreme caution when wedging them. The glove box lock plug contains five tumblers in positions four through eight. (See photograph 10.)

Next month we'll cover making a first key to the Mercedes-Benz 190E.

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ELECTRONIC SECURITY

Test Article #87

Unwinding The Mystery of Recording

by Charles Stephenson

Im just beginning to remember how to program my VCR and now I'm faced with a whole array of new features to learn on my CCTV system's recorder. Well, I won't let this technological revolution defeat me! I vow to go down learning how to cope in this age of electronics—and I just might enjoy some of it."

Maybe this describes your situation with the rapidly changing world of electronics. While the market presently offers a wide array of features and prices on VCR's, we can feel comfortable in knowing that the basic CCTV recorder is the same VCR-type unit that you have been using at home all along with the exception of a few added extras. Let's examine three of the most important features and differences of the CCTV recorder: recording speed, alarm inputs, and tape formats.

The function of real-time recording is almost self-explanatory. The speed of the recording is in sync with the activity being recorded. Recording in real-time is important because we capture all the activity and preserve it for future review or as evidence against criminal activity. Real-time recording gives us not only the highest quality video image but also an accurate record of when the activity took place, when imprinted by a time-date generator (TDG). To be used as evidence in court, the recording must be in real-time and imprinted by the TDG.

The biggest drawback to real-time recording is the united total recording time on a tape. A T-120 tape allows two hours of recording. At this rate, someone not only has to change tapes every two hours, but also uses 84 tapes to preserve a week's worth of recording. Using a T-120 tape for real-time recording is not practical, which leads us to the world time-lapse recording.

Time-lapse recording allows us to slow the speed of the tape, slowing recording from 60 frames per second

(real-time) to one frame per eight seconds using a 960 hour recording mode and a standard T-120 video tape. The current selection from recorder manufacturers give you time-lapse recording options ranging from a single recording speed to over a dozen speeds from which to choose in a single VCR.

While real-time recording captures all the visual activity, many surveillance situations do not require such a detailed recording. On the other hand, ultra slow recording only captures one frame every eight seconds, possibly not recording enough information. What is the most desirable speed? There is no single answer, as no two surveillance situations are exactly the same.

One compromise between using these two speeds is using a recorder with alarm capability that can suddenly shift from time-lapse to real-time recording when an alarm is tripped. Such a recorder imprints or flags the tape with a signal when the alarm is tripped. During playback a high speed search feature may be used to quickly pass over the normal activity and shift to real-time playback mode when this alarm signal is detected. Recorders with these features can be the most economical and efficient.

Another type of recording is event recording. This calls for a recorder that begins recording in response to an alarm or preprogramming. Be aware that there is a response time to consider when using this type of recording. Once the alarm is triggered and the signal is relayed to the

recorder there may be a delay of several seconds before actual images are captured on tape.

One important consideration when selecting a recorder is whether an intruder or surveillance subject can accomplish his goal during a "lapse" in recording. Remember, one frame is recorded every eight seconds when in the 960 hour mode, and depending upon the recorder selected, several seconds can pass before an event recorder actually begins recording.

Some may wonder why the old home VCR isn't a good choice to incorporate into the surveillance system. First, the limited recording speeds limit the applications of the home VCR. There also is no alarm input. A few other features absent on the home unit are alarm indexing, alarm search, a time-date generator, built-in camera switcher, 12 or 24 volt DC, and the capability to interface with other surveillance devices.

Alarms come in a wide variety of forms, including simple push button and toggle switches used in intercoms, door chimes, hold-up switches, PIR (passive infrared) motion detectors, shock sensors, and magnetic contact switches. Any of these devices can be used to trigger the recording of activity, to display the images captured by a specific camera, and/or to get the attention of viewers.

There are several recording tape formats available. The most popular at the moment is VHS, which we are familiar with here in the USA. When taping at standard speed, a T-120 tape allows two hours of recording time. The VHS format produces a maximum

(Table 1)		
Format	Recording Time	TV Lines of Resolution
VHS	2 hours	240
S-VHS	2 hours	400
8mm	1 hour	240
Hi8mm	1 hour	400
VHS-C	30 minutes	240

240 TV lines of resolution.

The S-VHS (super VHS) format also allows two hours of recording time but produces 400 TV lines of resolution. Many recorders feature recording in both VHS or S-VHS formats.

The 8mm recording tape format is gaining popularity in both the consumer and security markets. Much like the VHS and S-VHS formats the 8mm is now being challenged by Hi8mm. The 8mm allows one hour of recording at standard (SP) speed and produces 240 TV lines of resolution. The Hi8mm also limits recording time to one hour but increases the TV lines of resolution to 400.

The VHS-C format appears to be unpopular due to several restrictions. When recording at standard speed VHS-C is limited to 30 minutes and produces 240 TV lines of resolution. The tape cartridge is inserted into a VHS cassette adapter to playback on a standard VHS machine. This format was intended to lighten portable equipment but the 8mm has risen in popularity for this purpose.

I would be amiss if I didn't mention the security of the recording device

(Table 2)

Recorded Images	Recording Mode
60 per second	2 hours
5 per second	48 hours
2.5 per second	48 hours
1 per second	120 hours
1 per 4 seconds	480 hours
1 per 6 seconds	720 hours
1 per 8 seconds	960 hours

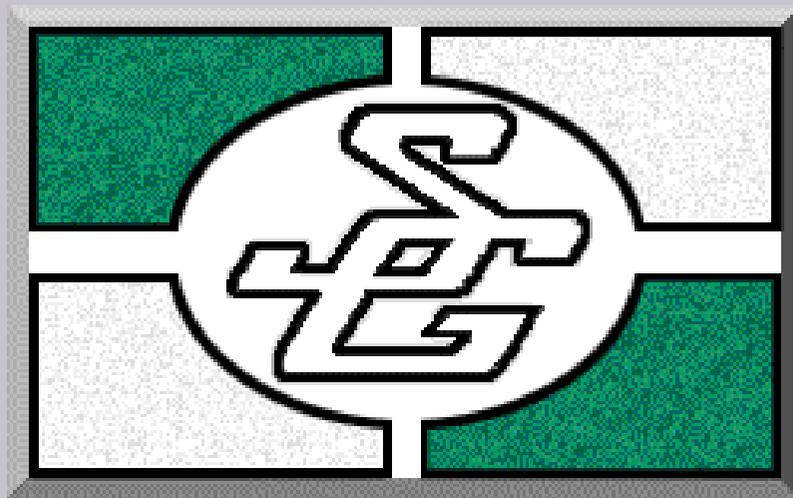
itself. All your efforts and investment will be for naught if the recording device can be detected and/or compromised by an intruder. Security lock boxes are available to solve just such a problem. These metal cabinets not only secure the recorder and limit access but also may feature internal blowers and filters to assure adequate clean air flow around the unit.

The endless variety of features and options available on recorders should not be a source of confusion. The selection of a good distributor of surveillance equipment will assure you of a patient staff who will help you determine which features are most important to fulfill your goals.

Join me again next month to explore switchers multiplexers and some of the other optional devices available when designing a CCTV surveillance system.

The author is in field sales and CCTV development with Lockmasters, Inc. If you are thinking of expanding your line of services to your customers, he may be contacted at Lockmasters at (606) 885-6041 between 8 a.m. and 5 p.m., Monday through Friday.

The author would like to thank Sean Horenstein for his invaluable contributions and assistance once again in preparation of this article.



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BEGINNER'S CORNER

Computers

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by
Eugene Gentry

A computer is one item that locksmiths might consider purchasing. In the business it will help save time and money and in personal life it is educational for adults and school children. Imagine conversing with locksmiths and getting information from suppliers all around the country. Through Internet you can correspond with people around the globe for the cost of a local phone call.

We are now in an electronic age with computerized locks and all types of electronic equipment being used in

business and in our personal life. The computers are becoming more sophisticated and the price keeps coming down. For about \$1000 to \$1500, you can buy a good IBM compatible 486, 4MB computer with many features. A good desk jet printer runs as little as \$200.

For those that are unfamiliar with computers, here are some of the basic features on many computers that would be valuable in a business or one's personal life.

Word Processing: Just the matter of writing a letter is simplified by the computer. You type like you would on a typewriter, and all the words go on a screen. Then you can make any changes like moving words, sentences or paragraphs. You can bold, italicize, or underline, or even use different styles of lettering. Even the less expensive computers have a spell-check that will correct your spelling, and if you need it, a Thesaurus. With programs such as Word Perfect 5.1,

5.2 or 6, the computer will correct your grammar. When you finish writing, you can print out as many copies of the letter as you want. You can see, with just these few features that the typewriter is out dated.

Accounting: The computer has a spread sheet which can be used to record all your personal or business finances. Other uses would be to keep track of inventory in your shop and record daily service calls and charges.

Customers: There is a card file, similar to index cards, in which you can record all the customers or suppliers names, addresses and telephone numbers. If business gets slow, you could send out some advertising to customers.

Calendar: This is set up like a regular calendar with date and time. It can be used to record reminders or appointments.

Calculator: This is handy. You can set it for regular or scientific use.

Memo Pad: This is similar to a scratch pad where you make any kind of notes or reminders to yourself.

Drawing Program: I use this frequently in business and personal to draw plans or ideas. One locksmith told me he used a computer to design a security gate for a driveway. He figured out all the dimensions, and the costs for building and installing the gate.

Other Business Uses: More companies are now coming out with locksmith programs that you can install in your computer. Several have master key programs that will set up a master key system. Another is a key comparison chart, and another is the entire code books on disk. It takes just seconds to get all the information you need for codes. I suspect that in the future there will be more programs for the locksmith.

Communication: One thing that can be added to your computer is a



Computers are quickly becoming a part of the locksmith's business and life. Hopping on board allows you to communicate with hundreds of locksmiths around the country, as well as *The National Locksmith*, from any place and at any time.

Continued on page 114

Cover Feature

The Second Monday Of This Week

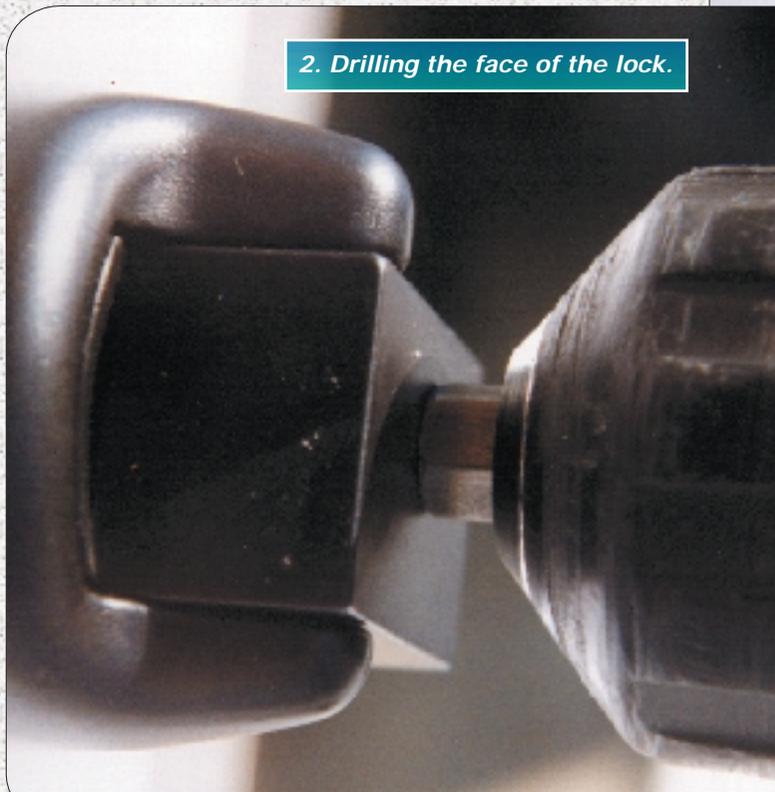
Sunday	Monday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	X	X					

by Jake Jakubuowski

TAKE A RIDE WITH JAKE AS HE USES THE RIGHT TOOL TO THWART OLE' MURPH'S ATTEMPT AT MAKING OUR LIFE HARDER.



1. Place the template of the GM 9-Wafer Ignition pick into the face of the lock.



2. Drilling the face of the lock.

When my alarm went off Monday, I didn't know that I was starting a week that was going to be two Mondays long. And, because Murphy is alive and well, I wouldn't find out about it until he and Mother Nature double teamed me later in the day. Otherwise, my day (and week) started out just fine, thank you!

Actually, I was kinda' chompin' at the bit to get started since I had some new toys (I told Christie that they were indispensable and necessary tools of the trade!) that I was anxious to try out. My first job was at 8 a.m. at a local GM dealer to make a set of keys for a 1995 Buick Skylark. The Skylark, as many of you know, has the new GM 10-Cut key system and this was going to be my first shot at making an ignition key for one from scratch.

Because I like to be prepared, I had acquired Frank Markisello's (Aable Locksmiths) GM 9-Wafer Ignition Removal Kit and was rarin' and ready to give it its shakedown cruise. Let me tell you it works!

To better illustrate the tool, I took the accompanying photographs after I had removed the cylinder from the car. The first thing that's done is to place a drill template into the keyway. This aligns your drill hole directly over the sidebar. (See photograph 1.) Once in place use Frank's drill and mandrel to drill a hole. This hole is used to insert the sidebar depression tool. (See photograph 2.)

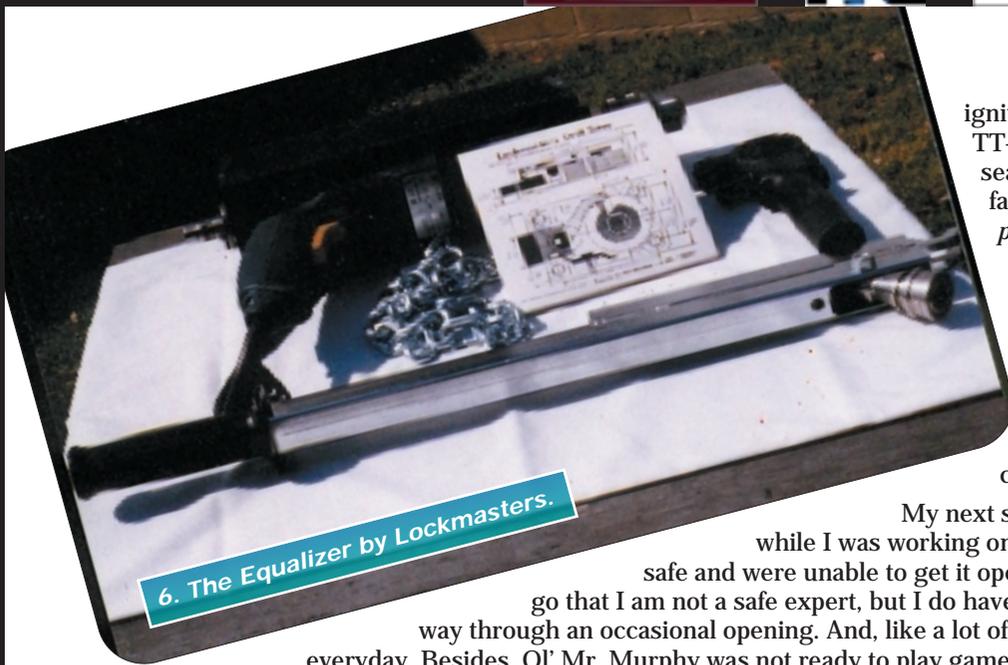
After inserting the sidebar depression tool, pick the lock, depress the spring retainer and remove the lock.

At this point I was able to see the code stamped on the housing, so I made a working key. And to plug up that little hole in the facecap, I used one of the little plastic plugs supplied with the pick set. Despite first reservations, it made one fine repair. (See photograph 3.)

While I was working on the Skylark, the shop manager came to me and asked me if I could go out to a customer's home and make them a new VATS key for their '90 Camaro. It seems the customer had their key but it would not start the car because the resistor pellet had fallen out.

At any rate, I quickly wrapped up making the key for the new Skylark and headed out for the VATS job. When I got to the customer's home, I used their non-working key to cut a duplicate on an Ilco P1098AV key blank. (See photograph 4.) I then placed the mechanically correct key into Tech-Train's TT4002 Bypass Adapter and inserting the key and adapter into the





ignition. This was then hooked up to Tech-Train's TT-4004-2 VATS Interrogator and I began searching for the proper resistor value. I was fairly fortunate and hit it on the #6 key. (See photograph 5.)

Again, I have taken the above photographs outside of the vehicle to better illustrate how everything hooks up and works together. Besides, when your my size by the time you get tools, equipment and hands the size of mine in or around a steering column - there ain't much room left for manipulating a camera to come up with the best pictures!

My next stop was at a convenience store that had called while I was working on the VATS job. Seems they had locked the safe and were unable to get it open. Now, I want to make it clear from the get go that I am not a safe expert, but I do have enough knowledge about safes to muddle my way through an occasional opening. And, like a lot of others out there, I'm learning something new everyday. Besides, Ol' Mr. Murphy was not ready to play games with me just yet.

When I got to the store and began to question the folks about the safe's behavior, everyone said it had been working "just great" until an hour or so ago - and then it just refused to open. What I finally found out was that the manager had decided to change the combination "an hour, or so ago"! HO!

The safe was an older Gary with an S&G 6730 mounted to the right of the handle. I got the new combination from the store manager and ran it a few times. Then tried dialing up and down from the numbers he gave me - no luck. Then I tried to manipulate the unit. Again - zip! Oh, well! That's what they invented drill motors for. Right? Anyway I got out The Equalizer, a lever/pressure rig put out by Lockmaster's. (See photograph 6.)

Using a lock template, I was ready to mark my hole for drilling on what I assumed was a right hand mounted lock. In fact, I had already center punched the hole location to drill into an open area of the lockcase, when I got a nagging doubt as to the wisdom of that move. Something clicked into place in my memory banks and told me that this lock was mounted vertical down.

Having learned that instincts should be listened to, I went out to my truck to see what I could find out about the safe that I

Continued on page 34



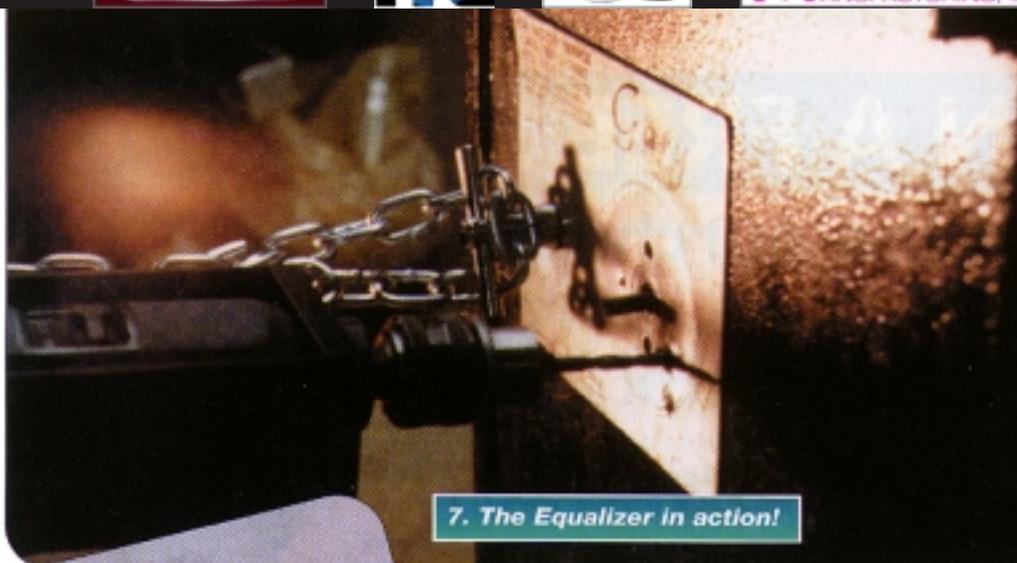
***To be a World Leader You Need Quality Products,
Innovative Technology and Strong Partners.***

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Continued from page 32

was working on. Again, nada! Murphy was beginning to work his magic. So, I called my friend Tom Gallian and asked him what he thought. He advised me to go VD with my scope hole.

Photograph seven shows The Equalizer in action on the new scope hole after I had removed the dial and dial ring. Man! It turned out to be right on the money! Of course, being a Gary, there was some



7. The Equalizer in action!

hardplate between me and the lockcase. But, with the pressure rig giving me the leverage I needed it only took about fifteen minutes to complete the hole.

After opening the hole, it was only a matter of lining up the gates and transferring to the opening index. All-in-all, it took me about an hour to get the unit open and another hour to effect the necessary repairs and put the unit back in operation.

I have found The Equalizer to be more than equal to most safe openings that I handle. It's certainly not as effective as Lockmasters 357 Magnum, but it is a good lightweight portable drill rig.

I'm going to make one more call before I go to lunch. The only reason is: the job is a single rekey on a Kwikset knobset and the customer is between me and one of my favorite eating places. Besides, I know that the job will not take me more than three minutes! In fact, it will take me longer to make out my bill and collect my money than it will to rekey this lock. How come?

Well, a couple of reasons. First, I keep beau coup extra key-in-knob cylinders pinned up and waiting for just this sort of job. Secondly, I bought A-1 Security's Quickpull tool for just such an occasion at the convention



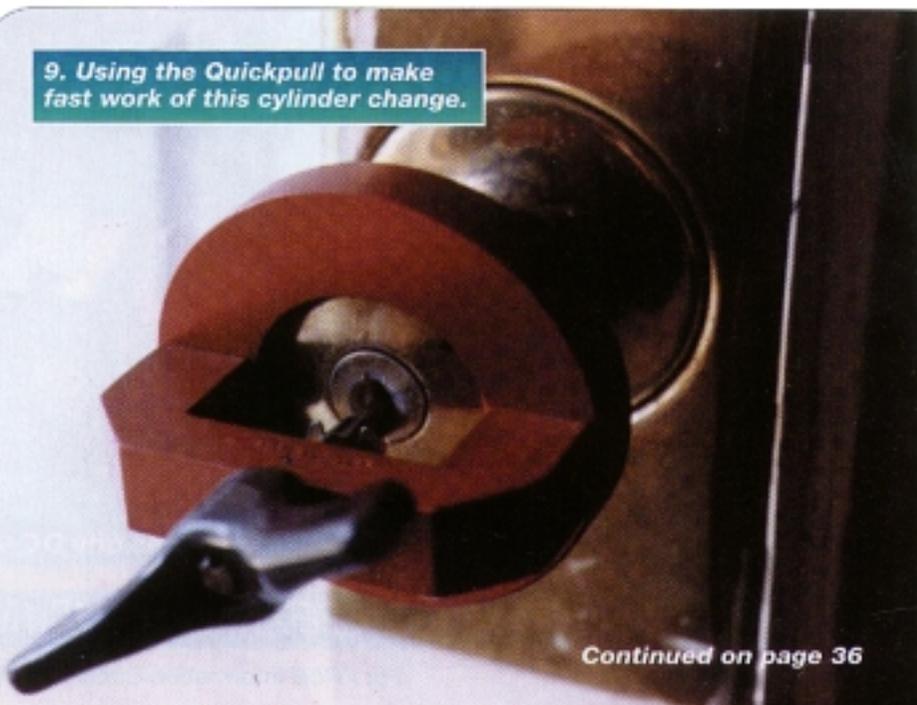
8. The Quickpull by A-1 Security.

in Baltimore several years ago. (See photograph 8.) So, on this particular knobset, all I have to do is walk up to the door, insert the Quickpull tool and pull the cylinder. (See photograph 9.) I pop a new cylinder into the knobset, give the customer the keys and collect my coin.

Later, when I accumulate a bunch of lock cylinders, I sit down in the truck and key up another dozen or so to use later on. I'll say this - I may not be willing to kill to keep my Quickpull tool, but I'd sure be willing to give someone a really mean look if they tried to sneak off with it.

O.K.! Now it's lunch time! And, it's here that Murphy is going to start making my week two Mondays long. The first thing that happens (which is not bad) when I walk in is the manager grabs me and tells me he wants me to change the combination on his safe before I leave. No sweat!

9. Using the Quickpull to make fast work of this cylinder change.

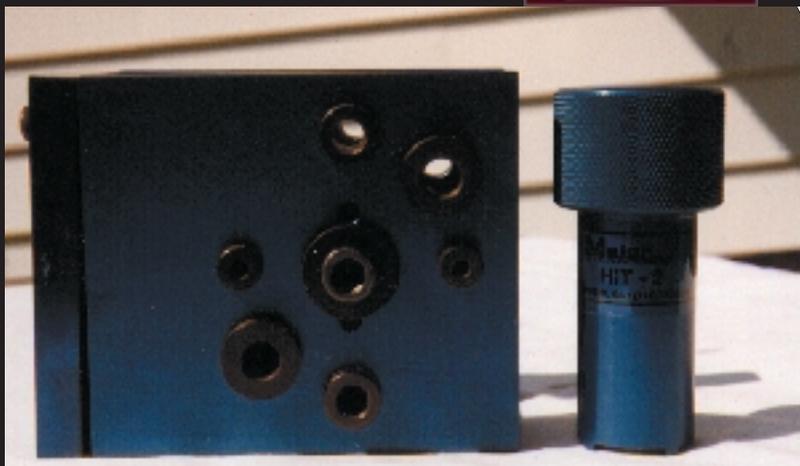


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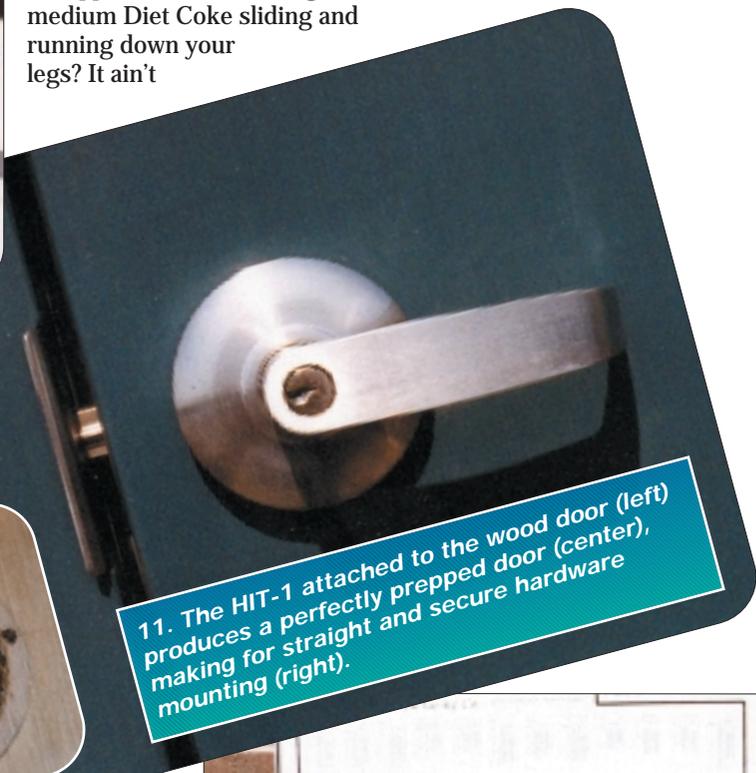
Continued from page 34

I get my sandwich and drink, set down in the booth, put the tray on the table and Murphy pushes the whole tray right into my lap!

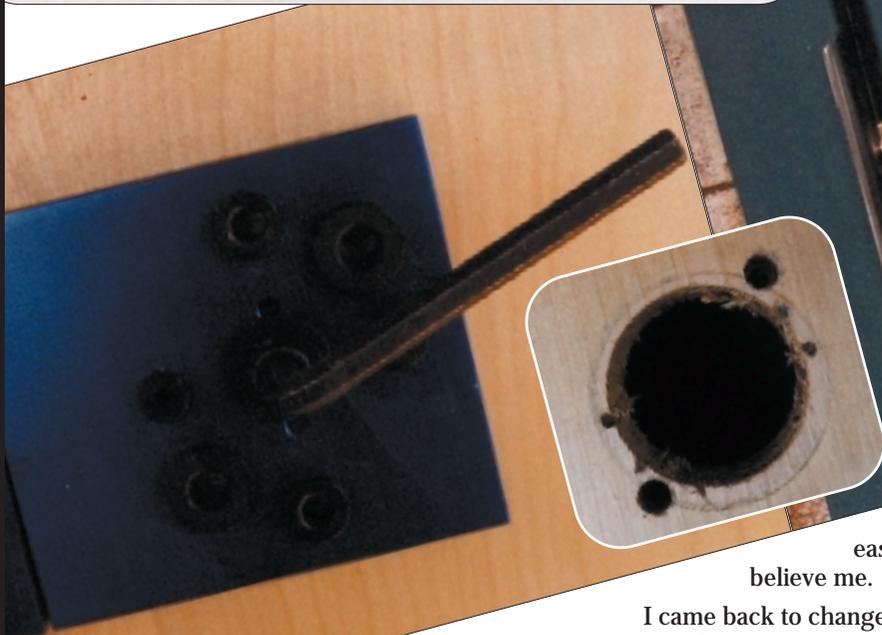
Have you ever tried to act suave and debonair with a Whopper with cheese, large fries and a medium Diet Coke sliding and running down your legs? It ain't



10. The HIT-1 door template by Major Manufacturing.



11. The HIT-1 attached to the wood door (left) produces a perfectly prepped door (center), making for straight and secure hardware mounting (right).



easy,
believe me.

I came back to change the safe combination after I had gone home and changed my clothes. At any rate the safe was a Major that I had changed the combo on half a dozen times or so over the last couple of years. The cover plate that was over the lock did not have an access hole which meant you had to take the cover plate off which also meant that if you weren't careful putting it back on, the relocker could fire off.

I changed the combo, ran several tests, had the manager open the door a time or two and went on my merry way.

My next job was at a medical facility where I had to rekey several locks and install two Sargent 10G16 leversets. One of them on a wooden door and one on a steel door. When I first began installing fair numbers of leversets, I bought a HIT-1 made by Major Manufacturing. (See photograph 10.) This tool definitely makes the installation of these locks easier. Especially on steel doors.

Photograph 11 shows the HIT-1 mounted to the wood door, the resulting holes for mounting the lever, and the lever mounted to the steel door after being prepped by the HIT-1. Straight and clean as a whistle. Now, on to the rekeys and when that's done I can call it a day (Maybe!).

Photograph 12 shows my Specialty Products Pinning Kit, an HPC 1200PCH Punch Machine™ and tool box mounted on a collapsible roll-around cart that I made from an old laundry bag cart. I use this cart to do multiple rekeys in larger buildings. It saves me time and I don't have to keep running back to my truck to get things.



12. A Specialty Products pinning kit and HPC Punch Machine for fast, on the road rekeying.

With the 1200 Punch Machine on the cart also, I can even cut the keys that I need right at the door. (See photograph 13.) And, with everything I need on the cart, I just roll the cart from door-to-door. In fact, this cart is so handy that several of my friends have taken to using them in their businesses.

Finishing up with the rekey, I was more than ready to head home and have dinner with Christie. I was also looking forward to a nice relaxing evening.

While I got dinner, however, Murphy put the kabosh on the relaxing evening. About 9:30 p.m. the manger at the restaurant where I ate lunch (O.K.! So I actually tried it on for size rather than ate it!) called to say they could not get the safe open! As Gomer Pyle used to say: "Shazzam!" As Murphy gleefully smirked: "Gotcha!"

I can't say that the prospect of leaving home again after a long and tiring day was exactly my idea of party-time, but that's a locksmith's lot in life. Right? Sure, it goes with the territory! Even so, I was not whistling "Zippity Do-Dah" on my way to Whopperland!

When I got to the restaurant, I immediately tried the combination that I had set earlier. I could feel the fence drop and the bolt retract, so I knew that the lock was functioning okay. I also knew that I had a relocker that had fired off. And I knew why it had. I had not secured the lock cover properly. That was the only explanation and it didn't make me feel too good.

So, out to the truck and bring in The Equalizer (Looking on the bright side, I don't often get to use The Equalizer twice in one day! On the other hand, I detest having to use it for free!). While in the truck I looked the safe up in Dave McOmie's Safe Opening Manual to find the drill point for the relocker that had fired. Then, I took everything in the office and started to work on the safe.

After marking my drill point, I used a nice new Cobalt bit to cut a fast hole down to the hardplate. I didn't even put the pressure rig on the drill for that one. Then I reached into my bag for a Mr. Twister bit and Murphy absolutely roared with laughter! I was out! I had used my last one on the Gary earlier in the day.

A couple of frantic phone calls enabled me to locate a friend and fellow locksmith who had what I needed. The problem was that he was 45 miles away and tied up on a job of his own! Well, there was nothing for it but to go to him.

Two and a half hours later (which makes it the second Monday of the week as far as I'm concerned - even though it's really 2:45 a.m. Tuesday), I'm back to the restaurant and ready to get this daggum safe open! An hour later I've got the door open. Photograph 14 shows my drill bit behind the relocker after it had been driven out of the way.

The manager said it was all right to repair the safe door the next day. That was fine by me. I went home, took a shower and told Christie to make sure I was up in time to get to my first appointment the next day. I had to make a set of keys for a BMW.

For more information on the above products contact:
Aable Locksmiths, 91-10 Liberty Ave., Ozone Park, NY 11417, (718) 847-1377.

Tech Train Productions, 8400 Pittman Ave., Pensacola, FL 32534, (800) 356-0136.

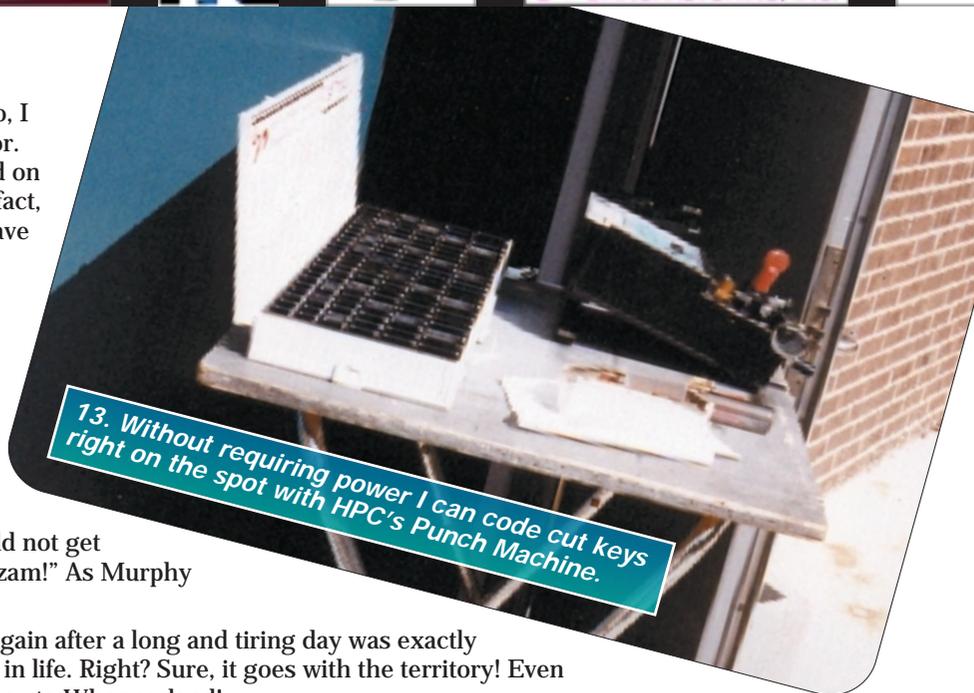
Lockmasters Inc., 5085 Danville Rd., Nicholasville, KY 40356-9531, (606) 885-6041.

A-1 Security Mfg. Corp., 3528 Mayland Ct., Richmond, VA 23233, (804) 747-0095.

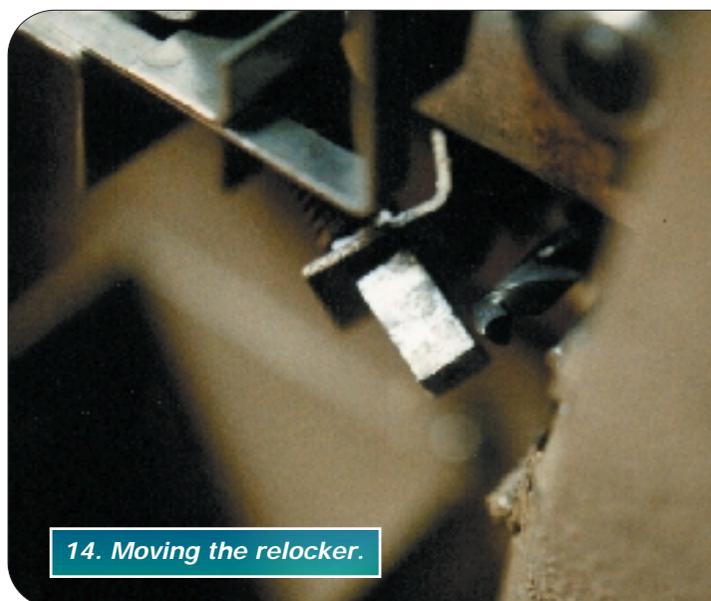
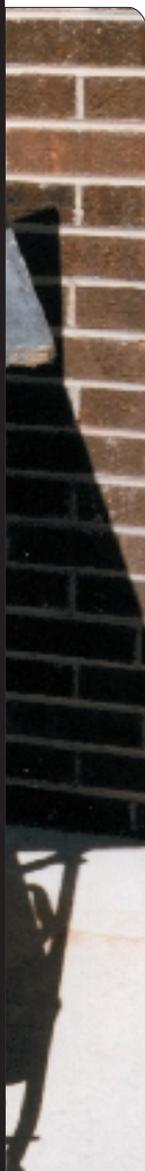
For Major Manufacturing, Inc. products contact a Major distributor, or P.O. Box 788, Atwood, CA 92601, (714) 772-5202.

For Specialty Products Mfg. Co. products contact a Specialty distributor, or 291 Clark St. Ext., P.O. Box 158, Plantsville, CT 06479, (203) 621-6969.

For HPC Inc. products contact an HPC distributor, or 3999 N. 25th Ave., Schiller Park, IL 60176, (708) 671-6280.



13. Without requiring power I can code cut keys right on the spot with HPC's Punch Machine.



14. Moving the relocker.

PORTABLE, PRODUCTIVE AND PROFITABLE - THE HPC 1200PCH

Cover
Feature

Fast, accurate code cutting without the need for power.

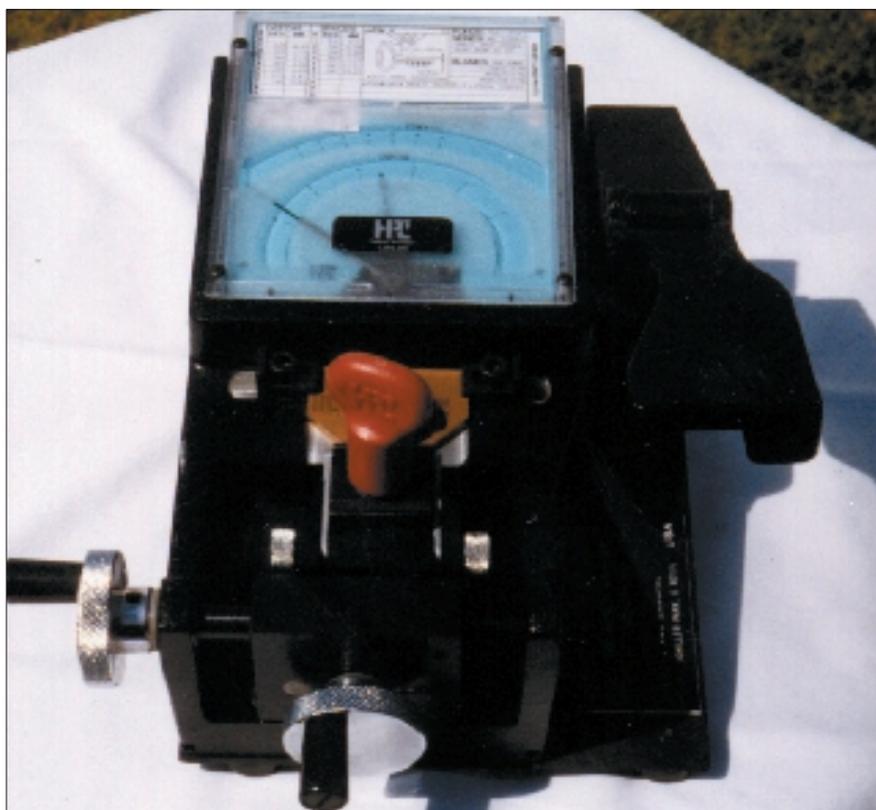
by Jake Jakubowski

Have you ever been in a situation where you needed the ability to generate keys on the spot - and couldn't? Or, you are called out to the boonies at 2 a.m. to make keys for a car only to find that the whosezit or watchamacallit broke and you can't get your cutter to go?

Well, folks, let this ol' boy tell ya': "The cavalry has arrived?" I don't care whether you're in the Texas panhandle, the Florida Everglades or the middle of the Mojave desert - If you have HPC's Punch Machine™ on your truck, you have what you need to get you and your customer back on the road. (See photograph 1.)

Even if you're a hundred miles from the nearest electrical outlet, HPC's 1200PCH will quickly and accurately cut one or a hundred keys. The Punch Machine is an economical, rugged and accurate code machine that works without electricity. And, weighing in at only fourteen pounds, it's a "go anywhere" piece of equipment that is rugged enough to stand the trip.

To further insure that your punch machine will survive the trek, a sturdy high-density molded plastic carrying case with preformed foam padding protects the machine during



1. The HPC 1200PCH Punch Machine. Fast accurate cutting without the need for power.



2. The Punch Machine at home and protected in its carrying case.

transport or while bouncing around in the back of your van as you navigate Buzzard Gulch to get to the 4x4 with the lost keys.

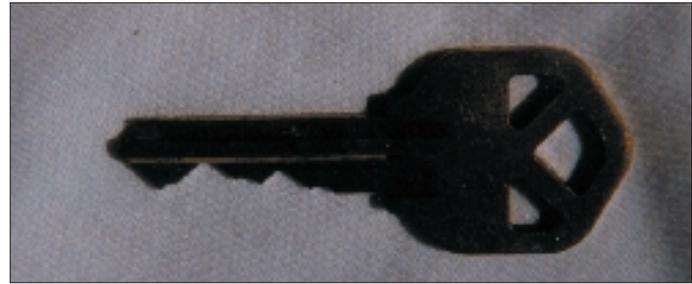
If you don't want to use the case, the machine can be carried by the leg base or the PCH-H handle (optional) can be mounted on the machine without drilling any additional holes. However, I recommend using the case since it gives the machine "wrap-around" protection and you have the ability to carry all of your code cards, cutters and such that you might need. (See photograph 2.)

The 1200PCH uses the same code technology as the 1200CM. You insert the proper code card under the lens of the machine, select the spacing and depth specifications for the key you want to generate, put the proper blank in the vise, push down on the handle, move to the next space and repeat the

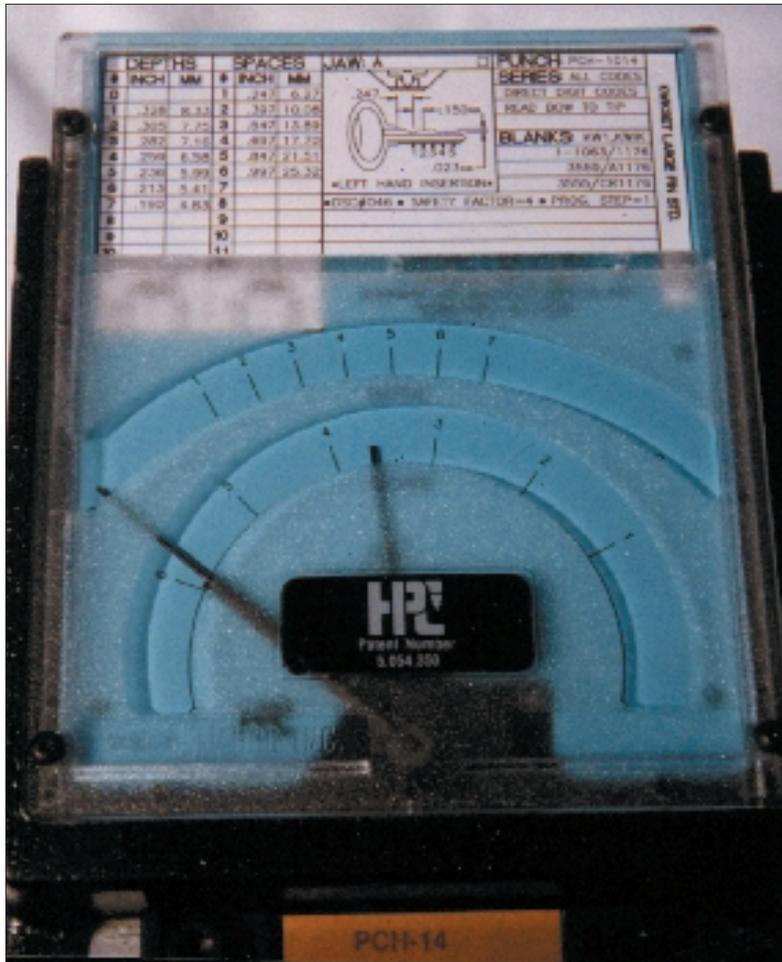
process until you have completed you key. (See photograph 3.) It takes about 30 seconds to cut a key on the Punch Machine once you become accustomed to using it.

By the way, code cards for the 1200PCH and the 1200CM are not interchangeable. If you already own a 1200CM and decide to purchase a 1200PCH - keep the cards separate.

Other than the cards and the fact that you don't need electrical power, the main difference between the Punch Machine and a 1200CM is that the Punch Machine uses four punches rather than cutting wheels. In fact, the great



3. A completed code cut key.



4. Like the 1200CM this Punch Machine uses space and depth cards for cutting the key.

majority of your work will be done with just two punches. The two most common punches are the PCH-1011 for cutting most automotive and other types of keys and the PCH-14 for cutting a wide variety of residential and commercial keys. The PCH-1011 and the PCH-14 punches are included with the 1200PCH.

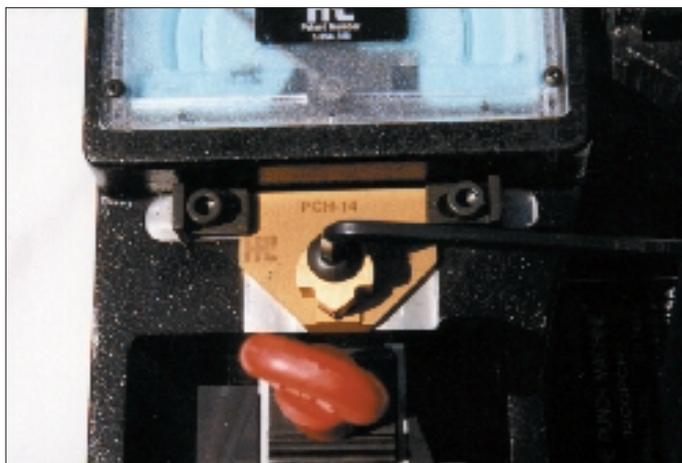
Changing set-ups on the machine is extremely simple and quick. Unlike some hand held units which feature small pieces to replace, the punch changes in just a second using an allen wrench. And, of course, code cards slip in and out in an instant.

For later model foreign car keys that have close spacing specifications requiring a 47 degree cut, the PCH-47 is available. HPC also has the PCH-1014 punch available for keys that require a wide root cut such as Sargent, Falcon, etc.

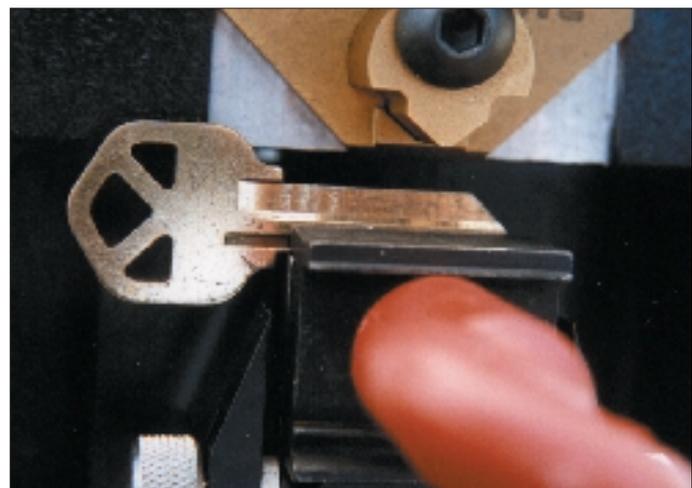
HPC has included with each Punch Machine a copy of the HPC Depth and Spacing Book. This book alone is a valuable and excellent resource for any locksmith.

While I'm on the subject of cards and such, I want to mention that as of this month, HPC will now include a previously optional deck of 83 code cards free along with the machine. The deck of free cards replaces the Little Mac (MAC-1) card maker which was previously supplied with each 1200PCH. If you wish to purchase the Little Mac as an option, you can obtain it through your distributor. However, the now included free deck of code cards covers what the locksmith will most frequently use.

For those of you not familiar with a Little Mac, the Little Mac is a card making device for any 1200PCH. Using templates and the information contained in HPC's Depth and Spacing Book allows



5. Punches are held in place by three Allen head screws.



6. Key inserted in vise.



7. The completed key.

you to originate code cards for various applications in just a few minutes.

O.K. Let's cut a key on the Punch Machine just to show you how easy it is. In fact, I actually cut twenty-five keys on an office rekey that I did recently (See "The Second Monday Of This Week" on page 30 of this issue of *The National Locksmith*) and the following photos show the process of cutting one of those keys.

Selecting Code CARD-P31 (Kwikset - Large Pin) and Punch PCH-1014, we're ready to do it to it!

First, put the card under the lens on the machine and place the punch on the machine. (See *photograph4.*) Next, insert the keyblank in the jaws as shown in *photograph five.* Kwikset keys are inserted from the LEFT. Now, you're ready to punch out your key. In this case, the cuts will be 2-5-4-7-3.

So, you set the spacing guide on "1" and the depth guide on "2" and push down on the handle. Then, repeat the process with the next four cuts. *Photograph six* shows the completed key. That's all there is to it! In 30 seconds or less, you have a clean, neat, accurate "code-cut" key!

Although the HPC 1200PCH is proving itself to be a workhorse in the field and needs very little service attention, it would be wise to coat the bearing and sliding surfaces with a light coat of grease every six months or so. Exposed steel surfaces such as shafts and the machine body should be sprayed with a light application of WD-40, Tri-flow or other similar product.

You should remove all brass chips, dirt and grime on a daily basis - especially around the jaw area. When necessary, you can clean your code cards with a mild and non-abrasive detergent and water. Then dab (Don't rub!) the card lightly with an absorbent cloth until dry. NEVER USE SOLVENTS to clean your code cards!

There you have it! HPC's 1200PCH is PORTABLE - it will go anywhere you want it to. It's PRODUCTIVE. With the exception of certain "true paracentric" keyways such as Yale, Russwin and Ilco's 1054K there are few keys that you cannot punch on a manual machine. And, because it gives you a greater potential to work in areas that you might once have found difficult, or were unable to work in - that means increased PROFITS!

So, friends and neighbors, if you don't already have an HPC 1200PCH, you at least owe it to yourself to go look one over and learn how it can make your life a little easier.

For more information contact an HPC distributor or HPC at 3999 N. 25th Ave., Schiller Park, IL 60176, (708) 671-6280. 

NATIONAL
AUTO LOCK SERVICE, INC.

National Auto Lock Service, Inc. offers a wide range of equipment and services for the Automotive Locksmith. From tools and hard to find key blanks to transponder programming, we can take the mystery out of car service. We accept credit card orders, and can ship COD. Contact us for the latest in automotive technology.

It's Elementary My Dear Watson!

*Creating a paper trail to prison -
Strategically installed and monitored, the access control system
becomes a locksmith's tool for fighting in-house crime.*



by
Steve Gebbia

The Incident

It is 10 p.m. on a Saturday and someone has just entered the main computer room of your college. This is a trusted employee of your department. He has authority to be there, but he is unhappy after receiving a less than perfect performance report and wants someone to pay for his recent cut in pay. He enters the computer room with the use of his Access Card and signs onto the mainframe that houses all of the school's important documents and academic records. After failing to remove the bad report from his record, he attempts to cause a system-wide crash. Although some damage has been done, the sophisticated operating system and his lack of computer skills has prevented a complete crash.

Monday morning, as Chief Locksmith, you are called to find out who caused the problem. Fortunately, you recently completed installation of a facility-wide card access system. For maximum security, all records are on your Personal Computer, located in your locked office, where all audits of the system can be accomplished in privacy.

The Investigation

You have many tools at your disposal. The first and most powerful is an Activity Report (also called audit

trail or report of events). This allows you to call up all attempts at entry at any particular door in the school - for any specified period of time.

You know that the system was compromised at a few minutes after 10 p.m. The first thing you want to know who was in that room Saturday evening. You are also looking for an entry that shows access was denied. This means someone attempted to enter an area where they did not belong. Such a person might then attempt to borrow a card from someone who does have access. You request and print out an Activity Report for the door to the main computer room. This is a portion of what you receive:

This report has provided you with a great deal of information. When you set up this system, you designated a cardholder identification number with a letter and number combination that identifies the individual and the department they belong to. Only college employees are issued access cards. (Any student requiring access to a locked room must be accompanied by a Faculty member.) This simplifies your task, because you can readily connect each user to a particular department without having to reference a departmental directory.

Activity Report for Main Computer Room

Door number 134, Laymon Hall			
Start Date: 03/04/95		Start Time: 17:00 hrs	
Stop Date: 03/04/95		Stop Time: 24:00 hrs.	
Time	Cardholder ID	User Name	Activity Result
17:00	S 312 437 7455	Johnson, T.	Access Granted
17:35	E 673 213 5779	McCormick, M.	Access Granted
18:15	M 231 462 2253	Windsor, J.	Access Granted
19:42	S 312 437 7455	Johnson, T.	Access Granted
19:57	S 232 143 5734	Anderson, S.	Access Granted
21:50	E 673 213 5779	McCormick, M.	**ACCESS DENIED**
21:59	S 232 143 5734	Anderson, S.	Access Granted
22:37	S 312 437 7455	Johnson, T.	Access Granted
23:55	S 312 437 7455	Johnson, T.	Access Granted

END OF ACTIVITY.



Noticed are several inconsistencies on this Activity Report. The first is that the security guard, Tom Johnson, did not complete his rounds properly that night. He is required to enter the room at least once during each hour. He missed his round during the 18:00 hour (6 p.m.), and again during the 20:00 (8 p.m.) and 21:00 (9 p.m.) hours. You make a notation to discuss this with both him and his supervisor.

A second flag is the 'Access Denied' at 21:50 (9:50 p.m.) issued to English Professor Mark McCormick. This was shortly before the problem occurred. This is a highly respected member of the faculty who is allowed access to the room, but only during certain hours. Since the system is still fairly new, he probably did not remember that he was not allowed there at that time.

Nevertheless, you will discuss this with him - even if only to remind him of his hours of free access.

There is a third problem that is even more troubling. Stuart Anderson, a member of the security staff, entered the room shortly before 22:00 (10 p.m.) While being allowed access, there was no valid reason that he should be there. He also has computer usage privileges. Additionally, he has not been a model employee as of late. He is now your prime suspect.

Gathering More Evidence

Before any action can be taken, you must



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MINI SECTION

have overwhelming proof. Therefore, you continue to look for further evidence that allows you to call him in and question him about his activity that night. Your next tool is the Cardholder Report. This allows you to see where in the facility a particular user was and at what time. Below is a printout of the Cardholder Report for your suspect:

Cardholder Report				
Cardholder Number: S 232 143 5734				
Cardholder Name: Stuart T. Anderson				
Department: Security				
Supervisor: Frank P. Walker				
Start Date: 03/04/95		Start Time: 00:00 hrs.		
Stop Date: 03/04/95		Stop Time: 24:00 hrs.		
Time	Door #	Building	Location	Activity
18:57	010	Administration	W. Entry	Access Granted
19:00	041	Administration	Security	Access Granted
19:25	042	Administration	Registrar	Access Granted
19:30	052	Administration	Financial Aid	Access Granted
19:37	026	Administration	Maintenance	Access Granted
19:41	041	Administration	Security	Access Granted
20:00	032	Administration	Lounge	Access Granted
20:26	041	Administration	Security	Access Granted
21:23	042	Administration	Registrar	Access Granted
21:31	052	Administration	Financial Aid	Access Granted
21:38	026	Administration	Maintenance	Access Granted
21:42	041	Administration	Security	Access Granted
21:55	130	Laymon Hall	South Entry	Access Granted
21:59	134	Laymon Hall	Computer	Access Granted
22:17	010	Administration	W. Entry	Access Granted
22:19	041	Administration	Security	Access Granted
END OF ACTIVITY				

This report adds more damaging evidence. Standard procedures call for two security guards to be on duty in each building. They share responsibility for making the regular rounds.

The first two entries show that he reported for work at 19:00 (7 p.m.) after entering the west entry door of the Administration building. The next four entries are his appointed rounds for the evening. He is to enter each of these rooms and look for anything or anyone out of the usual. He took his break at 20:00 (8 p.m.) and then made his rounds again. But there was a difference this time. During his first round, it took him just five minutes to go from the registrar's office to the Financial Aid office. On his next round, it took him eight minutes. This is not much of a difference, but it can help support other evidence. You decide to check the log-on record of the computer in the Registrar's office and find that he did attempt to sign onto that terminal. His password was not accepted, but his attempted log-on was recorded. Another important piece of evidence.

When he returned from his 21:00 (9 p.m.) rounds, he told his co-worker that he was going out for coffee. Instead, he went directly to the computer room and logged on. This is clearly recorded in his Cardholder Report.

Because of the importance of the computer room, you also had a CCTV camera installed to capture anyone



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entering the room. Another camera inside records anyone at the computer terminal. Both cameras feed directly to time-lapse VCR's. Both of these cameras and VCR's were operating that night.

Presenting The Evidence

You now have ample evidence to question your suspect. You meet with him and his supervisor and present the following :

- The Activity Report showing him entering the room just before 22:00 (10 p.m.)
- The Video Tape showing him actually enter the room.
- The Cardholder Report Showing him spending additional time between the Registrar's office and Financial Aid.
- The Cardholder Report showing that he left the Administration Building, entered Laymon Hall, and then entered the computer room.
- The computer log of the Registrar's computer showing his attempted log-on.
- The computer log from the mainframe showing his log-on there.

-The Video Tape showing him sitting at the computer terminal

After seeing this, he breaks down and admits to causing the damage. Your job is done. This is now a job for the police.

This scenario may seem far-fetched, but is actually based on an incident that occurred at a small private college. The methods described above were actually used to locate the offender. (Only minor details such as names and ID numbers were changed.) Amazingly, he was not aware that his movements could be traced so precisely. He also was not aware that every time he logged onto a computer it was recorded in the computer's memory. As for the cameras, he thought they fed only to a monitor and was not aware that time-lapse VCR's existed. The reason he was apprehended so quickly is that the system was very well designed and was tailored to meet the exact needs of the school.

The vast majority of the public is unaware how much information can be collected and stored by a card access system. You, as a security expert can use this lack of knowledge

to the advantage of your customer.

The heart of a modern access control system is the personal computer. The power of the new computer chips allows a great deal of information to be collected and sorted. To make use of this information, you must be able to print it out in a usable form. These are your Audit Reports.

By designing these reports to give you the important information, and with careful monitoring of activity, security around any facility can be increased tremendously. There is no right and wrong way to set up a card access system. The best setup is the one that meets the customer's needs. And since needs will vary, so will systems. The real trick is to create reports that tell you exactly what you need to know. **TRU**

*"The actions of men are the best interpreters of their thoughts."
—John Locke*

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Going Keyless
With the

KEYLEX 2000

Within the small field of keyless mechanical access control systems, the Keylex 2000 by Door Systems, Inc. offers some rather attractive features and options.

by Tom Seroogy

Tough, attractive, easy to install, easy to service - all are characteristics of the Keylex 2000 mechanical, push-button access control unit and a new option for locksmiths and locksmith customers. (See photograph 1.) With the small field of keyless mechanical access

control systems, the Keylex 2000 by Door Systems, Inc. offers some rather attractive features and options.

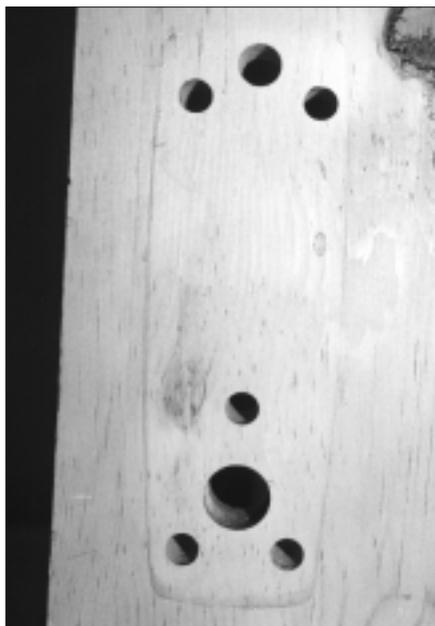
The first noticeable characteristic is that the unit is constructed of all metal, making it especially suitable for



1. The Keylex 2000.



2. This unit is all metal and comes with a two year limited warranty.



3. Seven crossbore holes and one edge bore hole are all that are needed for mounting this unit.



4. The passage function offers your customer an unique and useful option when dealing with high traffic doors.

customers needing to secure and/or control high traffic doors. (See *photograph 2.*) The exterior of the unit is made of a cast zinc and solid brass body, and is available in a satin chrome or antique brass finish. The internal mechanisms are made of stainless steel. Together this creates a solid, durable, weather resistant unit.

The 2000's tubular design makes the installation extremely simple. Using the manufacturer's template, seven crossbore holes are drilled for mounting the unit to the door. The edge bore is made to accommodate Schlage's B250 deadlatch. (See *photograph 3.*) This offers the locksmith an easy installation in either a 2-3/8" or 2-3/4" backset.

The all metal construction combined with the Schlage deadlatch have won the Keylex unit a fire rating for installation on up to 1-1/2 hour hollow metal doors.

Some of the features of the 2000 include a 14 steel button face that offers over 16,000 possible combinations, a field activated passage function, a Medeco bypass key (optional) and a slip clutch safety function with field reversible levers



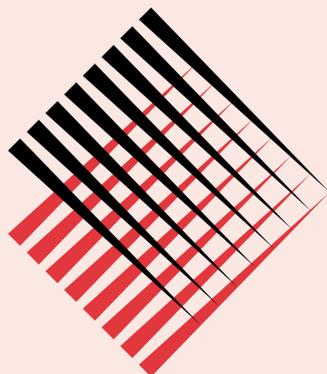
5. Remove the lever screw and lever.

(knobs also available).

While offering over 16,000 possible codes, the design of the locking mechanism allows an alpha-numeric combination to be entered in any order or sequence. If a combination includes the digits A - 2 - 4, for example, the entry of these three digits in any order (2 - A - 4 or 4 - 2 - A) allows the lock to work.

The passage function of this unit is used during times when access restriction is not required. Simply punch in the combination, retract the latch and turn the passage function thumbturn. It should be noted that this feature cannot be used without first using the combination. (See *photograph 4.*)

Key bypass is made available through a Medeco cam lock found at



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MINI SECTION



6. Remove the four flat head screws and the backplate.

the bottom of the lock body. The bypass lock can come single keyed or master keyed.

As an added feature, the outside lever is protected from damage of forced entry through the use of a slip clutch mechanism. If too much force

is applied to the lever, the slip clutch releases the lever, allowing it to swing freely to the six o'clock position. Not only does this feature protect the security and integrity of the unit, it also eliminates all problems related to lever sag.



7. Remove the spindle mechanism backplate.

While all of the above mentioned features are nice selling points, the ease of service is probably the clincher. Changing the hand, and changing or finding a forgotten combination is fast and easy.



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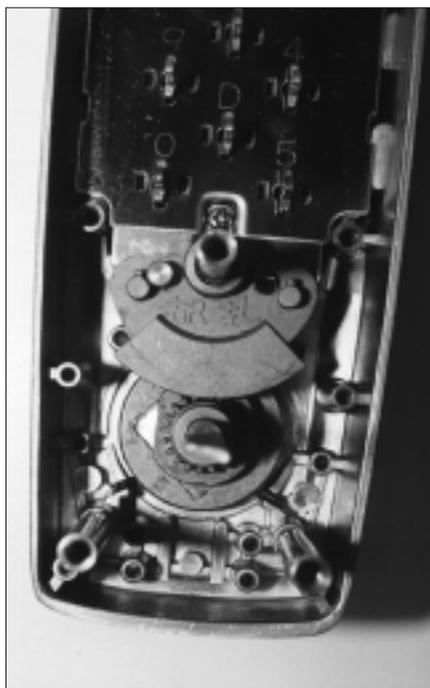
To change hands, first remove the unit from the door, then remove the lever retaining screw and the lever. (See photograph 5.) Turn the unit over.

Four large, flat head screws and 10 smaller, round head screws are visible. The smaller screws are painted red and should not be touched at this time. Remove the four larger screws to remove the backplate. Remember, do not touch any red screws at this time. (See photograph 6.)

With the backplate removed, remove the four smaller red screws that hold the spindle mechanism backplate on. (See photograph 7.)

With the plate off, the spindle and lock plate cam are exposed. (See photograph 8.) Reverse the handing of the lock plate cam by removing the drive pin from its seated hole on one side of the cam to the hole on the opposite side. Then turn the spindle to reverse the handing. (See photograph 9.) Replace the cover and the handing change is complete. Now it's time to change the combination.

While the only drawback to changing a combination on the 2000 is



8. The components for changing the handing are now exposed.

that the whole lock has to be removed from the door, the simple design of the unit makes it impossible to "lose" a combination.

This, of course, means that the locksmith is called out to change the



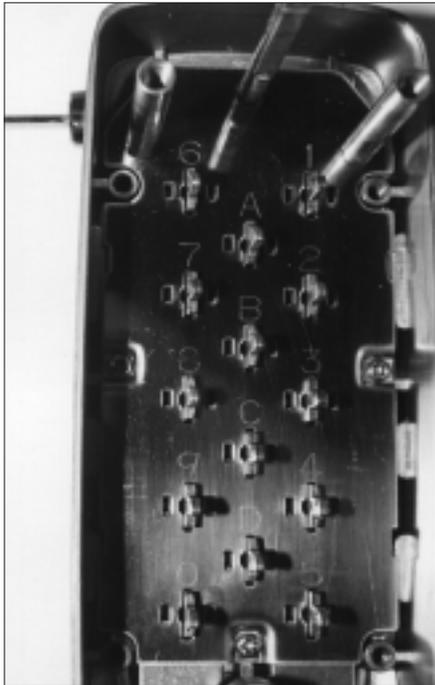
9. Switch the drive pin from one side of the cam to the other and the turn the spindle to finish the handing change.

combination in the first place, short cutting the need to calm a customer that just lost the combo and eliminating the complicated procedures for finding it.

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10. The lock plate and tumblers.

Instead of creating a combination through a series of aligned gears, the 2000 makes use of slotted tumblers and a sliding lock plate. When the correct combination is entered, the slots in the tumblers allow the lock plate to slide freely, allowing the rest



11. Tumblers with gray side up represents the combination.

of the lock to operate.

To change the combo, remove the four large head screws and backplate as described above. Inside the housing there is a plate with the button numbers etched at their

respective positions and a tumbler for each number. (See photograph 10.)

Each tumbler has two sides, one colored a steel gray and the other side copper.

Remove all the tumblers that have the gray side showing and turn them over so that the copper side is up. At this point all the tumblers should have the copper sides up and showing. As the tumblers only insert in one direction, do not force them into position.

Now, remove and reverse each tumbler that is part of the new combination. In other words, for every digit of the combination, the tumbler for that digit should have the gray side up or showing. (See photograph 11.)

Replace the backplate, check the combo and it's done!

As can be seen, while the Keylex 2000 is the new kid on the block, it isn't some overpriced, overrated clone underachiever. It's tough, versatile and offers some outstanding and unique functions and features. And, in the small world of mechanical push-button access control, this new option for locksmiths has been a long time coming. **TNL**



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Access Control Products

MINI SECTION

Accessor By Access Technology, Inc.

The Accessor is the answer to your access control problems with more functions than systems costing much more. Add 700 code capacity and 2000 log audit trail to existing entries or new installations. Four models: key return, hook, mortise and electric strike all have multiple lockout



options. Easy software programming with IBM compatible computer. Codes can be added or changed at the keypad. Shown with weather/vandal shield.

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Maglock/Pushbar Access System By Adams Rite

The Adams Rite Electromagnetic Lock Kit contains "everything needed to install a single door access control system except the wire." A 1200 lb. magnet, 24 volt transformer and



rectifier, outside key switch, 8099M request-to-exit pushbar and an armored door loop are included along with fasteners and instructions.

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Alarm Lock's PG30 SIRENLOCK

Alarm Lock's PG30 SIRENLOCK, the keypad-programmable, keypad-controlled, multi-function door alarm. Featuring narrow stile, PG30 has



master, management and user codes plus, auto-alarming, ideal for every application. Additionally, PG30 provides any or all of the following: continuous power, multiple door monitoring and remote monitoring. Living up to its name, Alarm Lock's SIRENLOCK is equipped with a choice of three 95 db siren alarms.

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Cardkey PEGASYS 400

PEGASYS 400 is the ideal security management and alarm monitoring solution for small to medium sized businesses. Offering a comprehensive set of security features, like PC-based operation, user friendly interface, distributed processing, 10,000 custom graphic screens. The PEGASYS 400 is an affordable system that is easily installed and requires only minimal



training to operate.

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Corby 6000 Series Keypad

The 6000 Series Programmable Keypad from Corby Industries, Inc. operates one door (or other relay controlled device) for up to 36 people. It can be programmed, from the



keypad, using a 3 to 6 digit code. Includes up to four input conditions, supporting Request-To-Exit, a silent panic input, and with the addition of a magnetic door contact, it will report a "door ajar" and/or forced entry condition.

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Circle 368 on Rapid Reply

Dentco III by Detex®

Dentco III by Detex® is setting new standards for ease of installation and operation. Dentco III card insert and card swipe readers as well as keypad models can be easily installed with hand tools. Featuring programmable strike times, the keypad models allow up to 20 different



codes and card readers up to 512 different cards.

For **FREE** Information
Circle 369 on Rapid Reply

Door Systems, Inc. New Heavy Duty Keylex™

The first super heavy duty mechanical, keyless access control in North America is the Keylex 2000 series from Door Systems, Inc.

Comes with a two-year limited warranty, solid cast brass body with all metal components and "break away" slip clutch lever handle. Features include: field reversible lever handles, 2-3/8" or 2-3/4" by 5/8" throw deadlatch and a passage feature.



High security key bypass available. Retrofits existing door preps of other manufacturers.

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Circle 370 on Rapid Reply

IEI Door-Gard

International Electronics, Inc. (IEI) introduced the new Door-Gard Secured Series 500-user access



control product line It places the power of a single door "controller" into a low cost, flush-mount keypad called a Hub Control which houses all logic, relays and communication ports, including an on-board RS232 driver for upload/download and printing capabilities. The Hub Control mounts inside the protected area and accepts a variety of input technologies including indoor, outdoor and heavy duty keypads, magnetic stripe card readers and proximity readers.

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Circle 371 on Rapid Reply

Stand Alone Access Control System From Litton

Litton has released-PointGuard™ an exciting new card access control system providing coverage for one to 16 doors that accommodates up to 2,000 users.



PointGuard is designed to provide card access control and alarm input capabilities by combining only the modules required to meet a facility's specific needs. The system's modular design incorporates LonWorks™ technology from Echelon which utilizes a Neuron® chip.

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Circle 372 on Rapid Reply

Nel-Tech 6R3 Access Control Keypad

Nel-Tech's Model 6R3 keypad for access control features brushed stainless, architectural styling and durability. Controller boards are installed securely away from the keypad for tamperproof security. Controllers with one, three, or six



relay outputs are available to operate any electric lock or remote function such as alarms and lighting.

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OSI's Omnilock 500

The new OMNILOCK 500 Series stand alone access control system provides a 500 individual user code capability along with a 750 transaction audit trail. Made in America and built on a Grade 1 lockset, theOM500 installs in minutes and provides superior features and quality that you have come to expect from OSI Security Devices.

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Preso-Matic Keyless Lock

Preso-Matic® Keyless Locks - All mechanical - One finger operation - No knobs to turn or twist - Instant one button exit - Absolutely pick proof with jimmy proof deadbolts or deadlatches. New instructions insure easy installations. Change



combinations in less than two minutes. New finishes available: Marine chrome and Marine Textured chrome.

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Eclipse By PSCS

In an age in which simplicity is so important, the Eclipse is designed to be a fully programmable card access controls system, that is so easy to install and operate.... we wouldn't be surprised if you didn't use the instructions manual.



There are no special keys or flashing LED lights to confuse you. An integrated 32-character liquid crystal



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display (LCD) and keypad helps guide you through simple menu commands.

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Securitron's New Self-Contained Keypad

Securitron announces the all new DK-11 Digital Entry Keypad system. The DK-11 is a one piece unit furnished on a stainless steel single gang plate which can release any type of electric strike or electric lock for controlled entry. The DK-11 supports four user codes of 2 to 7 digits in length and a program code which



MINI SECTION



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allows quick code change from the keypad. Code memory is retained in a power failure.

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**Sentex System's
Electronic Directory
System**

Sentex Systems is now offering the Horizon System, a low cost electronic directory telephone entry which is truly affordable for any size building.



The Horizon combines all the basic telephone and code entry functions found in Sentex's popular Vista systems with a large two line, high-contrast LCD electronic directory and a new black metal keypad that is recessed into the faceplate and sidelit for easy night viewing.

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Circle 378 on Rapid Reply

**Von Duprin Desk
Consoles**

Two new desk consoles from Von Duprin, Inc. provide door control and monitoring for up to eight zones. Both



models can control and monitor electric strikes, electromagnetic locks, Chexit® controlled exit devices, electric latch retraction devices or other electric locks. Blank plates fill unused zone positions and can be replaced with switches for easy field expansion.

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**MicroKey By Winfield
Architectural**

The MicroKey system is designed for the small to medium sized project. There is no electrical wiring in this 5-level keying capability system. The lock can be audited for the last 1,200



key insertions providing date and time of key use, the authorized user and shows any unauthorized attempts. The MicroKey easily fits into retrofit or new construction projects. All keys are reusable and offer time zone keying control.

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Circle 380 on Rapid Reply

**TouchCode 16 By Yale
Security**

The Yale Security TouchCode 16



keypad unit allows up to 16 users, each consisting of up to 8 digits.

The T8790 (mortise) and T5490 (cylindrical) Series Locksets are designed to provide the industrial, commercial, residential, and hospitality marketplace with reliable, moderately priced, keyless entry (mechanical key override available).

For **FREE** Information
Circle 381 on Rapid Reply

**DoorKing Now
Manufacturing Radio
Controls**

The DoorKing High Security MicroClik transmitters are small, light weight hand held devices available with one, two, or three buttons. Each transmitter is coded at the factory to one in over 1,000,000 available codes. If a single transmitter is lost or stolen, it can be deleted from the system, and a new transmitter issued.



The companion programmable receivers feature time zones, reporting capabilities, and can interface with other devices such as telephone entry systems and computer type access systems.

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BUSINESS BRIEFS

News from the Locksmithing Industry

INDUSTRY INTERVIEW...

This month we had the opportunity to speak to our Tech Editor Jake Jakubowski. Writing for The National Locksmith for over two years, now, Jake is best known for his marketing and business approach to locksmithing, and his down-home North Carolina tongue. Go to it, Bubba!

I know you prefer being called "Jake," but isn't that really your nick-name?

Yes. But, interestingly, I even have aunts that are nick-named Jake. No one seemed to be able to pronounce our family name so, people just called us all Jake. That causes some confusion whenever a group of us were together, 'cause if someone called: "Hey! Jake!" we all answered!

My biggest problem with using Jake as a nick-name comes about when I introduce myself to people. I say, "Hi, I'm Jake Jakubowski;" and they think I'm having trouble pronouncing my last name!

O.K., Jake! Now, besides writing for The National Locksmith, and operating your own locksmith business, do you have any other business interests or pursuits?

Actually, my wife, Christie and I co-own and operate our locksmithing business. As for other pursuits I write a weekly newspaper column about personal safety and physical security called: "LOCKIN' UP!" And speak to various civic groups on the same subjects.

How long have you been in the locksmith trade?

Seven years. Officially, I became a locksmith on September 19, 1987. That was the date that I completed my resident course at HPC's Learning Center in Schiller Park, Illinois. Within a few weeks, I had my own "mobile shop" operating.

Can you give us a little of the history on how you came into the field?

Literally by accident! Late in 1985, I had made a drastic change in my lifestyle (I'd like to think of it as a mid-life career change) and had gone back to construction work. One day while working off of a 10' ladder, I had a disagreement with a 4"x12", 20' long laminated wooden beam. The beam won!

I had a friend named Steve Wheeler who was a locksmith in Florida (where Christie and I lived at the time). Steve told me I should take a locksmithing course.

He even let me tag along with him, and began teaching me the basics. I found the work fascinating, got caught up in it and decided to attend HPC's school.

After working with Steve and taking HPC's course, I bought out the equipment and inventory of a retiring locksmith and with Steve's help set up my van. In May of 1987, Christie and I moved to North Carolina and started our present business.

What has been the most enjoyable aspect of working in this industry.

That's really a difficult question to answer. I mean, there's the independence of working for yourself. And, there's the self-satisfaction of doing a complicated job well. But, I guess the "most enjoyable" aspect is the people I've become associated with over the last seven years.

Aside from the people is the fact that my vocation (Locksmithing) has enabled me to pursue a very enjoyable avocation - writing.

What has been the most challenging aspect of working in this industry?

I think I would have to say: "Keeping up!" That is, keeping up with the changing and new products, and keeping with the latest service techniques for those products.

What changes have you seen take place in your industry?

Aside from some of the innovations we've seen in automotive lock technology, I think the biggest change is in the electronic and electro-mechanical aspects of the business. In just the short time that I have been a locksmith I have seen the emphasis shift from the basic mechanical aspect of locks and locking devices to the electronic access, electronic safe locks and more sophisticated electronic automotive lock technology.

Next is the increased effort in many areas of the country to pass Locksmith Legislation. There seems to be more interest being generated at all levels of the industry to promote regulation in



**Jake Jakubowski, Technical Editor
for The National Locksmith**

**...INDUSTRY INTERVIEW
(continued)**

the trade.

Why?

As far as the electronics are concerned, I believe the changes are simply a result of what I call "progressive demand." Since the technology is in place, being improved almost daily, and is commercially available....then business and industry (and ultimately, the residential markets) are "demanding" the "progressive(ly)" improved products.

Regarding Locksmith Legislation, there are pressures both within the industry and from outside the industry that are going to force this issue into being. I would hope that when registration of locksmiths becomes a reality, the final product is realistic and not restrictive in nature.

What direction do you think this industry is taking?

Because of product improvements such as electronic access, electronically controlled automotive locks, locksmith legislation and even the Americans With Disabilities Act, the

locksmith industry is becoming more technical and sophisticated.

How do you think these changes have affected the locksmith?

I think that "affected" is too mild a word. I believe impacted would be a better choice. Right now, I think the impact of these changes is minimal. But, I think that in the very near future, the impact will be cataclysmic in nature; and will literally shake this industry to its foundations. It will be up to each of us to ensure that the change is positive.

What changes do you see necessary if the locksmith is to be successful in the future?

As a generality - a change in attitude. By that I mean, the majority of locksmiths will have to adopt a more positive attitude towards the changes that are going to manifest themselves over the next few years. More locksmiths are going to need to embark on a continuing education program in order to meet the service requirements of the "progressive demands" I mentioned earlier.

Give us your picture of the future locksmith?

I see men and women that are smarter than we are today. By that I don't necessarily mean they have higher IQ's but that they're better trained and have better product knowledge than we do. I see locksmiths that can tackle an old mortise cylinder, and electronic safe combination lock or a twenty door digital access system with equal flair and confidence. I would not be surprised if most of them had degrees in their fields of expertise.

How do you think locksmiths can best serve their customers?

Some things never change and good customer service techniques are among them. Learn as much as you can. Be on time. Do the best job that you can possibly do. Say, "Thank You!" Charge enough to make a decent profit without gouging the customer. Act and work like the professional you think you are. Don't be afraid of positive change.

Any additional comments?

Just one. In an article I wrote for *The National Locksmith* sometime back, I said: "If you don't like what you see when you look in the mirror, don't blame the mirror!" **TRL**

HPC is proud to announce the **H₂nd** winner in their monthly Codemax™ drawing. **HPC** has awarded a Codemax™ computerized key machine to **Johnny Upton** of **C & E Locksmith** in **Fayetteville, Arkansas** on **April 1st**. It was purchased through **Hans Johnson Company** in **Dallas, Texas**. **HPC** will be awarding a Codemax™ to a lucky locksmith every month through February 1996. To qualify, locksmiths simply need to purchase any 1200 Series Key Machine and send in their registration card along with a copy of their distributor invoice to **HPC**. Once this is done, they will automatically be entered in the



contest. Entries will remain eligible until the conclusion of the contest. A total of over \$47,000 will be awarded. There are still **ten** more chances to win.

American Lock & Supply, Inc. has acquired the assets and operations of **Electric Lock Supply** of Los Angeles. Beginning February 13, 1995, American Lock & Supply will market Electric Lock Supply as the Los Angeles office of American Access Supply, a division of American Lock & Supply which specializes in the distribution of access control and electric locking hardware products.

Locknetics has launched its **1995 North American Security Tour** in response to this decade's growing concern for security issues in institutional and commercial buildings. The Tour consists of a comprehensive seminar directed to secu-



rity management and personnel, architects, owners and key individuals responsible for access control security. Events at thirty cities, strategically located across the US, Canada and Mexico, are currently scheduled on the tour in order to offer a seminar within driving distance for most interested parties.

Face-to-face meetings with manufacturers have been intensified by **Security Lock Distributors**, and now are a regular dealer service provided by the company. Each month, a different manufacturer is assigned a day to speak one-on-one with retailers, installers and other concerned with security and access control. Meetings include review of new developments in the field, examination of application and installation problems and information on product specification and performance.

Those interested in attending are advised to call Arthur Johnson at 617-444-1155. **TRL**

LIGHTER SIDE

Safe And Secure

“Look up Keith Knott’s phone number for me, will you?” Don called over his shoulder, as he breezed through my office and into his own.



by
Sara Probasco

“That’s Security Locksmith, in Llano Texas?” I asked.

“Right. Looks like I’m going to need some help getting that safe open.”

Calls to work on a safe are few and far between, in Uvalde, Texas. In fact, it’s unusual if Don is called on once a month to use his knowledge in this area, so he can get a bit rusty. I guess it’s fairly typical that most safe owners around here feel no need to summon a locksmith for their safe until it completely ceases to function or unless it becomes locked and no one knows the combination.

This was a case of the latter. All day, Don and Ted had been down at the bank trying to open a small Diebold safe. It was in mint condition (although at least seventy years old), but the mysterious combination refused to reveal itself despite the men’s best efforts.

The safe was part of the estate of a recently deceased 84-year-old bachelor whose only known heir was a nephew. It was being stored in the trust room of the bank under the jurisdiction of the attorney for the estate until it could be opened and the contents catalogued. There was reason to believe the missing will of the deceased was locked inside. Furthermore, rumors abounded that the man had secretly married, at one point of his earlier life; evidence of such a union might open up a whole chain of unknown heirs to his sizable estate.

An assortment of papers bearing

hand-written numbers had been presented from various sources for Don’s consideration, but none constituted a working combination to the safe.

Because of the pristine condition of the exterior, Don had been reluctant to drill into it, except as a last resort. However, those in charge had not seemed to share his concern, so he had finally proceeded in that direction, but to no avail.

“Just get a sledge hammer and beat the dial off,” suggested the impatient attorney when nothing seemed to be working.

“I figured you’d just blow it open with a stick of dynamite and be done,” injected a bank officer, only half joking.

Finally, Don had decided to contact a fellow locksmith with safe-opening expertise to see if he could help out.

Keith Knott was attending a Vindicator class in Austin, Texas, but Don was able to reach him there. After agreeing upon a price, it was arranged that he would drive to Uvalde (about 150 miles) the following morning.

Don had already drilled through the hardplate at an angle to line up the fence and gates, and Knott was able to scope through this opening, instead of having to drill another. His examination showed the fence had been slightly bent in the drilling process, and of a four-wheel combination, two were set the same, creating a bit of difficulty in accurately reading the combination. However, Knott soon had the problems identified and the door open, to the cheers of the onlookers. Then he removed the wheelpack and relocker from the safe, to prevent a relock.

After Knott presented his bill and left, Don was asked to remain as an official witness to the removal and inventorying of the safe’s contents.

The attorney removed a number of

papers. Among them was an old letter from (then) U. S. Vice President John Nance Garner (a native of Uvalde), vouching for the safe’s owner as a candidate for study at Texas A & M.

Tension mounted when a hand-written will surfaced.

Dated 1968, it bore no witness’s signature. Four of the five beneficiaries had already died. The amount bequeathed to the fifth, the nephew, although generous enough to purchase a large home in the sixties, wouldn’t go very far in today’s economy. Curiously, the remainder of the man’s estate was to be divided between a designated home for unwed mothers and an orphanage.

No marriage license was found.

“There were piles of old papers and documents in there to go through,” Don told me later. “And guess what was right on top – the safe combination.”

“Inside the safe?” I asked, incredulous.

“Right. Somebody must have told him to keep it in a safe place.”

At some point after the will was written, the man had apparently developed and patented an unusual automotive transmission, according to other documents found. The patent had been subsequently sold to a major automobile manufacturer. The sequence of dates on various documents indicated that money from the sale of his patent had led to his purchasing two sizable ranches. A fairly large income had resulted in the years since.

“Sounds to me like a will-breaking lawsuit, just waiting to happen,” I remarked.

“Could be,” Don replied.

I knew the nephew was the only known relative, but my novel-writer’s mind went to work. What if there had been an illegitimate child ‘way back

Continued on page 114

HINGING

by Tom Seroogy

Hanging doors may not be your cup of tea, but there's no reason a little profit can't be made from installing some new hinges to an old door. In fact, there are many times where a hardware or door problem can be corrected by simply adjusting and/or replacing the hinges.

I'm sure most of us are quite used to filing the bottom edge of a strike because the lock latch/bolt no longer aligns with the keeper. Unfortunately, filing the strike plate in most instances is like taking cold medicine for a cold - it takes care of the symptom and not

the cause. The cause of most misaligned strikes and latches is a sagging or misaligned door, and unlike a cold, will not go away or fix itself.

Three causes exist for a misaligned strike: First, a poor lock/strike installation. If a door's frame is square and the jambs plumb and in the same plane; If the door is structurally sound and square in the opening and the hinges are in good shape; If the strike and latch/bolt do not align, you can bet the lock and strike installation was bad.

Second, poor door/frame installation. If all the hardware on the door is in good shape, check for proper alignment of all the door components. If the frame isn't square and/or the jambs are not plumb or in the same plane; If the hinge pins are not aligned and parallel to the jamb; If the hinge screws are loose, stripped or broken; Or, if the door is warped or structurally damaged; you can bet the door/frame installation was bad or nature and aging have done their job in moving the door and frame.

In many cases, strike realignment can be accomplished by tightening any loose hinge screws or by shimming the hinges to readjust the placement of the door.

Shimming is done by placing small, flat pieces of metal (short lengths of metal banding work well) behind either the front or back edge of a hinge, respectively tilting the hinge pin towards the latch or hinge jamb. By shimming the hinges properly, the door can be adjusted to realign the strike and latch/bolt. While there is no secret method to shimming a door, doing it properly may involve some time and practice, and should not be done if the third and next problem exists.

Third, worn out hinges. Yes, hinges wear out, especially those used on exterior, commercial steel doors. Seldom are hinges maintained, and in

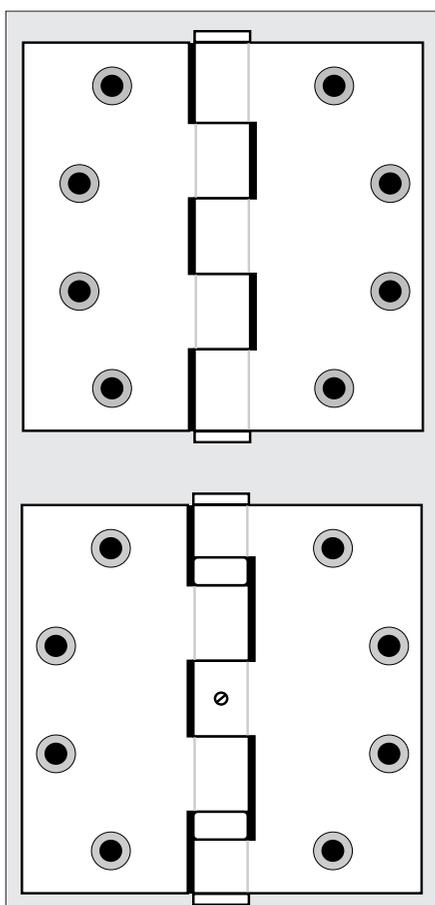


2. Use the correct tool for removing the hinge. In most instances a #3 Phillips screw driver is used.

both seaside and northern climates, corrosion can accelerate wear exponentially. And, because the top hinge carries the brunt of the door's weight, it is usually the first to fail, causing the door to sag. This, in doorman's nomenclature, is referred to as "hinge sag."

The solution, of course is to replace the hinge. Despite any outward appearances, if the top hinge needs replacement, so should the rest. And replacement is very simple.

First, select a hinge that is equal to or better than the original. For exterior, commercial steel door applications, I prefer the ball bearing butt hinge over the more popular standard butt hinge. Despite costing a bit more, the ball bearing hinge will give a few more years of dependable service to that doorway. Another feature for an exterior door is the set screw for the hinge pin. This set screw makes unauthorized hinge pin removal from outside the door virtually impossible. This feature should be on at least two of the three hinges used. (See illustration 1.)



1. The standard butt hinge (top) is the most commonly used hinge. For heavier doors and a longer life, the ball bearing hinge (bottom) is recommended. For exteriors, a hinge pin set screw is necessary to prevent tampering.

ON PROFITS

Sometimes hinge replacement is the only way to solve a door problem. It's always an opportunity to make a little more money and keep a customer happy.



3. Screws that are corroded and uncooperative may need to be drilled. Using a Black & Decker Bullet Point bit makes this job fast and easy.

In most exterior applications the hinges can be ordered prime coated so they can be painted to match the existing finish. Where necessary, hinges can be ordered in decorative and color coordinating finishes. In salty or corrosive environments, stainless steel hinges should be used.

To install the hinge, detach any door closers, then fully open the door and prop the end up by wedging it open on the latch side of the door. Wedging helps hold the door in place as each hinge is removed, making alignment and installation of the new hinge easier.

Once blocked and wedged open, remove the hinge screws. Most hinge manufacturers provide both wood and sheet metal screws. It should also be noted that a #3 Phillips screw driver is needed to remove and install the screws. The importance of using the correct size screw driver cannot be understated. Using the smaller #2 screw driver often strips the heads of

the screws and later necessitates drilling. (See photograph 2.)

In many cases the screws may be rusted in place and already have stripped heads. To make removal easier, soak the screws in a rust penetrant for a while before trying. If difficult to remove, several tricks can be used to further help loosen the screw.

If the screw heads are not stripped and the screw driver is grasping the screw well, grasp the screw driver handle with a vise grip or channel lock for added torque. Or, try tightening the screw first.

Rapping the end of the screw driver with a hammer while loosening may also help.

Of course, if all else fails, DRILL. In most cases, a 1/4" or 5/16" bit can be used to drill just the head off of the screw, leaving enough length left to grab with a vice grip or other tool later. Used in this removal, and the bit I prefer, is the 1/4" Black & Decker Bullet Point bit. (See photograph 3.) The small pilot point keeps the bit centered in the slots of the screw while the squared cutting edges remove only the head portion of the screw. This leaves plenty of screw left for grabbing later, or if necessary the pilot point has created a center point for drilling and tapping the hole. (See photograph 4.)



4. After drilling plenty of screw was left to grasp with a vise grip. This screw was easily removed after first soaking it with a rust penetrant.



5. The installed hinge. Notice that the hinge pin removes from the top. This is the correct direction for installing a hinge.

With the screws removed the hinge can be removed and the new one installed. It's usually at this time that door misalignment is most noticeable. In replacing the new hinge, it becomes quite apparent that the hinge plates of the door and frame don't exactly align with the new hinge. This is not unusual and should be expected.

To make installation easier and to avoid stripping the new screws, loosely attach one leaf of the hinge to the door or frame with two screws. Then gently maneuver the other leaf into position and loosely attach with another two screws. In some cases a gentle prodding with a screw driver or small mallet may be necessary.

Once in place, install the last screws. Make several rounds of tightening each screw to make sure they are all secure. Voila, your finished! (See photograph 5.)

DOOR SYSTEM PROFITS

THE KEY TO MAKING ADDITIONAL PROFIT
COMES IN UNDERSTANDING THE DOOR OPENING AS A SYSTEM.

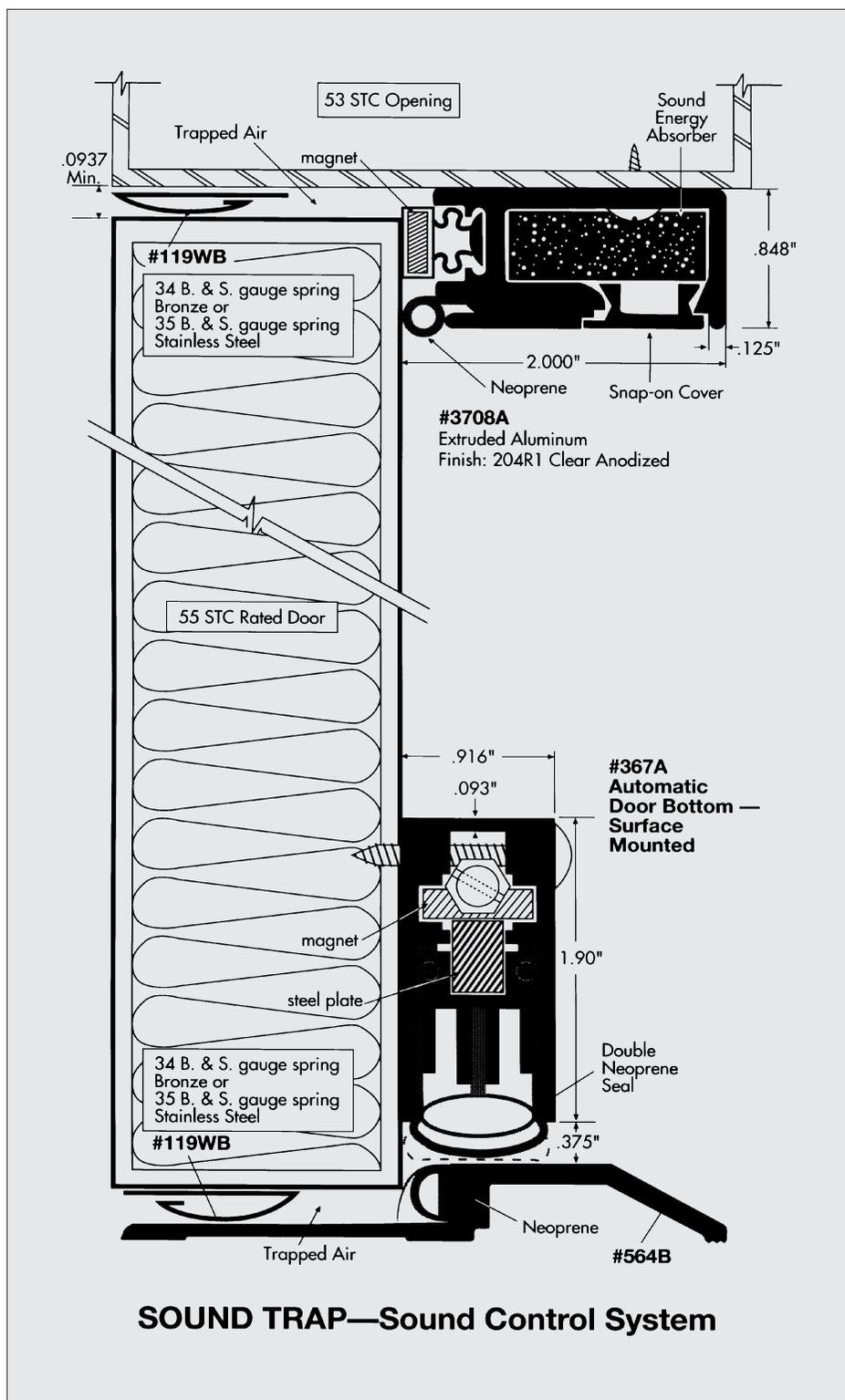
by *Elias Wexler*

There is new business to be gained in the commercial market for the locksmith with a broad view, and the key is understanding the door opening as a system. Properly designed and configured, head and jamb gaskets, door bottoms, thresholds and – for heavy-traffic applications – high-performance hinges work together to enhance the utility of the door for a variety of functions. And the ability to assess and address the specific needs of a door opening in turn enhances the value of the services the locksmith can provide.

There are several avenues for potential gain. Obviously, by supplying and installing other products, you can make more money from a given call. And with the benefit of additional experience and expertise, appealing to a broader clientele can generate increased business. Both repair work and bidding the complete door opening for new construction are promising sources of new revenues. In addition, recommendations for improvements provide ongoing possibilities for upgrade work with established clients.

Equally important though harder to quantify are the benefits of greater control that result from taking on responsibility for the door opening system. No more sprung locks due to improperly installed gaskets and hinges – when, for example, another contractor has secured the weatherstripping too tightly. The vicious repair cycle is eliminated along with the ability to point fingers.

The price of admission to the ranks of door installers is easy on the pocketbook. Little or no inventory investment is needed because the industry provides most products on a next-day basis. In fact, the biggest “costs” are added responsibility, and the need to learn more. This article will help you get started with a basic understanding of integrated door opening systems and their primary



1. Understanding a doorway as a system can lead to new profit opportunities for the locksmith.

components – using examples from Zero International's line of specialized solutions. It also identifies some resources available to assist you in solving specific problems.

Focus On The Fundamentals

Naturally, the door's purpose largely determines the requirements for protecting the opening. The typical exterior door needs to be weathertight from rain and cold – look for a threshold and weatherstripping with no gaps in contact with the door. Because most exterior doors are subject to ADA requirements for handicap access, threshold height needs to be minimized (1/2" for commercial entranceways); and limits on allowable door opening force require the use of specialized hardware, including door bottoms.

For security purposes, announcing systems or other electrical connections, some exterior door openings require wiring – along with specialized head and jamb gaskets as well as hinges. And to accommodate the stresses of high traffic through many exterior doors, pinless door hinges with continuous mounting systems provide excellent performance. Pairs of doors, with special meeting stile requirements, are typically configured for "escape routes."

Interior door gaskets can serve a wide range of purposes. For example, sound control sealing systems are often used to block noise emanating from mechanical rooms – and occasionally to shield offices and other rooms from outside sounds, or to provide privacy for conversations within. Similarly, doors to computer rooms and other "high value" areas that use Halon fire extinguishing systems typically require "air exfiltration" systems to maintain sealing capacity and prevent Halon leakage under positive pressure which pushes the door away from its seal.

Although specialized contractors may be appropriate for some such applications, your proposal as a locksmith knowledgeable in full door systems gives you the edge over the carpenters who are commonly used to install these systems. In addition, there is good new business potential from growing demand for fire and smoke control seals to protect the openings of key passage points such as corridor doors, and sometimes individual offices as well. Intumescent material, which swells and blocks the

opening as temperatures rise, is becoming increasingly common in these systems because of pending code changes.

Even for the most sophisticated gasketing system or needs, the initial assessment of the specific door opening always begins with the basics. From your most familiar perspective – is the door easy to close and latch? If not, examine both the hinges and gasketing to determine the points of resistance and possible explanations.

Conventional butt hinge mountings often fail when the mounting screw holes become enlarged, especially near the top of the door. And other problems can be traced to nicks and gashes in rubber gaskets – or loss of function in painted gaskets because the rubber has hardened. Simple contact seals are seldom sufficient to compensate for failures in door hardware or imperfections in door alignment – whatever the cause.

"Simple" Solutions Through Advanced Technology

Correcting basic deficiencies in door openings can be accomplished with use of well-designed gaskets; and individual components can be configured in integrated systems to effectively upgrade the function of the opening. (See illustration 1.) The following examples are gaskets and hinges that you can easily surface-mount; mortised models are available if your customer wants more of the hardware concealed for a smoother finished look.

The answer to many door opening problems is found with compression seals and adjustable gasketing. With a compression seal, the closing action of the door causes a specially designed, hollow neoprene rubber bulb to be squeezed against the full length of the door as it is closed. The compression preserves the air seal in spite of side-to-side movement or outward pressure placed on the door.

Compression action is combined with adjustable features in a Compress-O-Matic® Adjustable Sealing System designed by Zero (Model #770) for head and jamb protection. This gasket consists of an extruded aluminum housing containing a wide, elliptically shaped band of hollow neoprene which compresses as the door is closed to form a tight bond against the head and jamb. Adjusting screws along its length ensure that the



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seal conforms to any irregularity in the door and its frame. (See illustration 2.)

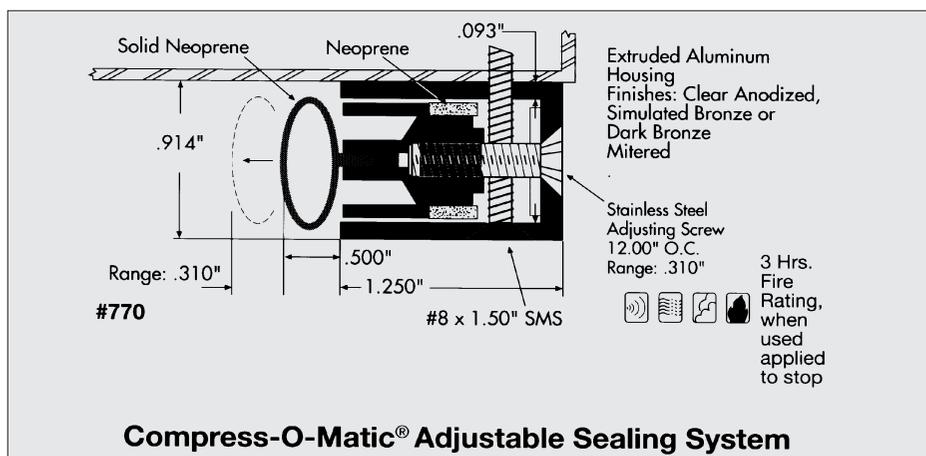
Building on the same basic operation, additional features are then added to create specialized capabilities. For sound control applications, for example, we add a neoprene-encased magnet to produce a tight second seal that acts as an additional sound barrier. The aluminum casing is also fitted with sound-energy-absorbing foam neoprene.

The most efficient Automatic Door Bottoms are somewhat more complicated in design – but advanced technology makes their installation and operation simple. Zero models utilize a concealed flat spring mechanism that activates when the door is closed to lower a neoprene seal insert firmly against the floor or saddle.

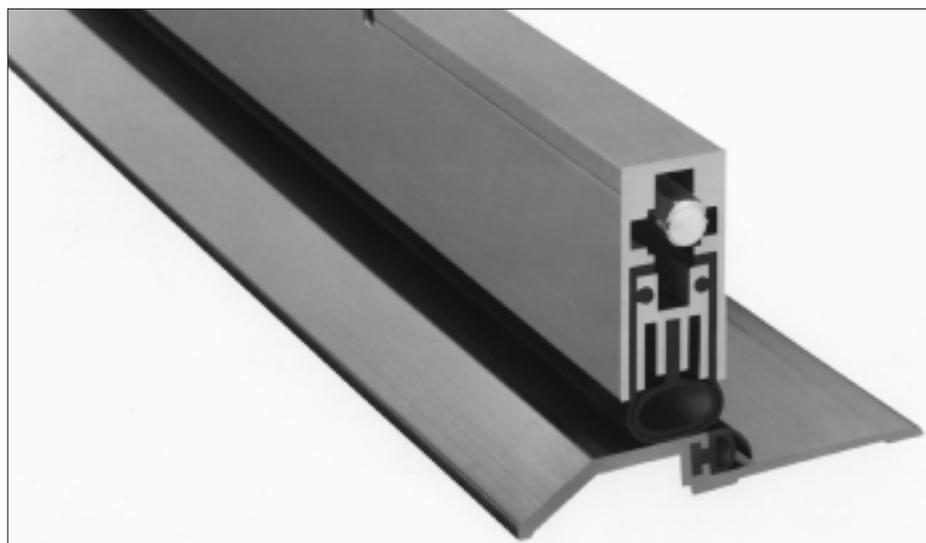
Triggered by a protruding, hinge-side “plunger” that is compressed by the frame as the door closes, the spring bends downward, dropping the seal in a scissor-like motion from the hinge side and adjusting to the floor from a center pivoting point. This motion ensures a smooth drop without drag and a tight seal, even on an uneven floor.

As the neoprene seal compresses, it forms a tight, secure bond against the saddle or floor. The door seal retracts automatically when the door is opened. The design also simplifies installation by allowing adjustment of the plunger following installation in order to achieve the proper drop, to a maximum of 1”. (See photograph 3.)

Again, variations on the standard permit specialized applications. For example, an automatic door bottom



Compress-O-Matic® Adjustable Sealing System
2. The most efficient gaskets for door openings incorporate both compression seals and adjusting features. Zero's #770 Compress-O-Matic Adjustable Sealing System for head and jamb protection is a good example of such a system



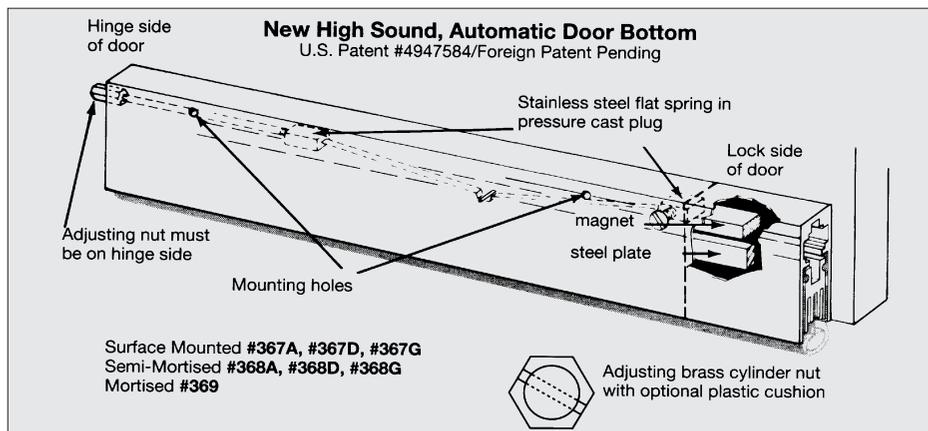
3. Automatic door bottoms are an essential component of many specialized systems for protecting door openings. Specific models are available for systems to block sound, fire and smoke, and EMI/RFI interference – and also to facilitate handicap access.

with extra features is the key component to delivering a very high Sound Transmission Class (STC)

rating with a sound control system. (See illustration 4.) In Zero's version which has double neoprene seals to minimize sound penetration, lock-side magnets and a steel plate amplify the action of the spring mechanism to ensure a controlled, uniform drop and seal.

In another increasingly common scenario, automatic door bottoms and saddles together are replacing traditional thresholds, which may not comply with ADA requirements. One solution is to use an automatic door bottom fitted with a very light activating spring that requires very little force for operation.

Where ADA constraints do not apply, door saddles can provide additional sealing capacity for the system. Zero's 564 Door Saddle is



4. Automatic door bottoms with extra features, such as Zeroes Model #367, can help maximize the performance of a sound-control gasketing system.

Continued from page 84

fitted with a neoprene bulb that has a protruding rubber "finger." The finger compensates for any misalignment in the door – as it compresses against the rubber bulb in the saddle, it is also compressed by the neoprene of the door bottom.

Life Safety Systems

Increasing emphasis on life safety in both building codes and the press means in many cases a receptive audience to proposals for upgrading the protection systems at door openings. All of the components discussed above are fire rated and can also be used in smoke control door

assemblies. The addition of intumescent material to these gaskets allows us to optimize the life safety benefits of an integrated sealing system – and enables you to offer door enhancements with unique added value.

Zero's INTUMET FS-3 Fire and Smoke Control System, for example, illustrates these benefits. The intumescent material (FS3003) built into its head and jamb gaskets, automatic door bottom and door saddle activates as temperatures from fire approach 250 to 300-degrees Fahrenheit – the level where organic materials begin to emit combustible and noxious gases.

This intumescent action enables the system to block penetration by smoke and toxic gases as well as heat and flames for up to three hours – even after the neoprene in the gaskets has started to lose sealing capacity due to rising temperatures. (See photograph 5.)

Stand-alone intumescent seals can also be easily installed along door openings for improved fire protection if no other fire-rated gaskets are in place. Keep in mind, however, that these simple seals do not offer any protection from the "cold" smoke that can penetrate openings before intumescent action begins.

Hinge Solutions For Extended Door Life

When butt hinges pull loose from a door frame, replacing them with the same type of hinge does not solve the problem. The solution is to install surface-mounted continuous hinges, which eliminate deflection and provide optimum alignment and uniform load distribution along the length of the door. (See photograph 6.) Fortunately, installation of some hinges is feasible for even single-person operations. Zero's UNIGEAR Continuous Hinge System can be installed by one person for doors weighing up to 150 pounds – simply place a shim under the door, push against the jamb and fasten the hinge.

These hinges integrate two extruded aluminum segments in a cover channel, with support bearings of long-wearing, self-lubricating Delrin™. With a full 180-degree hinge rotation, doors can open smoothly to their maximum width, which is also helpful when recommending improvements for handicap access.

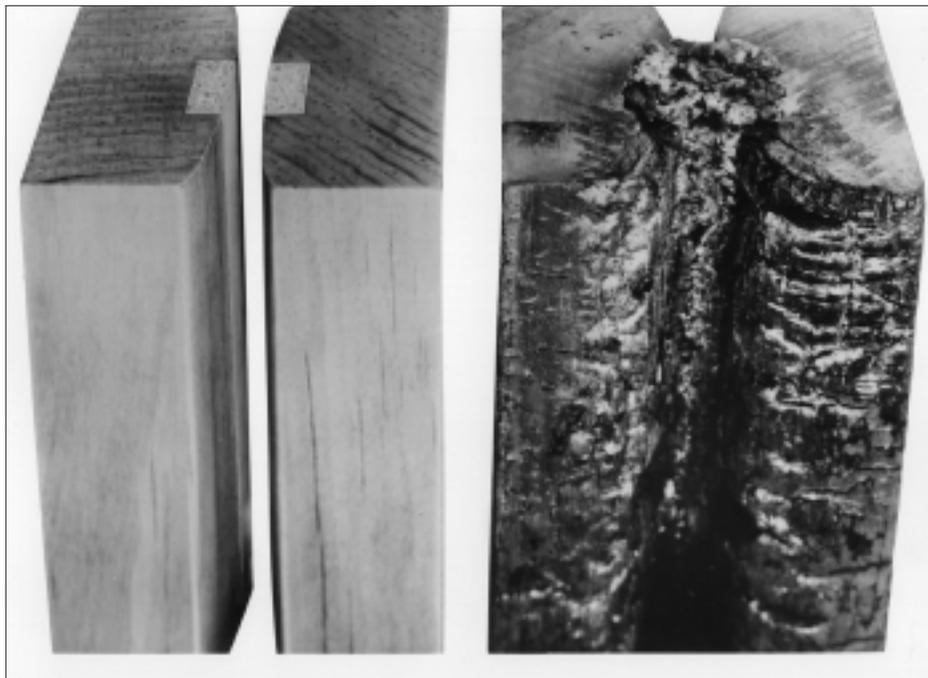
Optional features accommodate special needs, such as fire-rated doors, applications in high-traffic or high abuse areas including schools, or housing for insulated wiring to provide low amperage conductivity to locks, buzzers and alarm systems.

Where To Go From Here

If these possibilities for building your business appeal to you, some basic research and evaluation will help you select a reputable door hardware manufacturer to assist in your new endeavors. Look for reliable, good-quality hardware with clear, easy-to-follow installation instructions – and especially knowledgeable, accessible technical support. With the right

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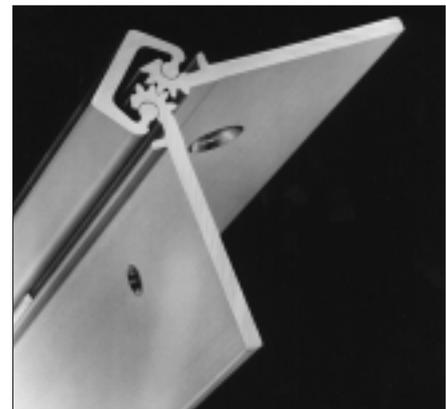


5. In the event of fire, intumescent material built into door gaskets, or applied directly along door openings, blocks penetration by smoke and toxic gases, as well as heat and flames.

equipment and back-up, you can count on doors opening to new opportunities.

The author is President of Zero International and past Chairman of the

Society of Manufacturing Engineers, New York Chapter. Established seventy years ago, Zero has designed and manufactures hundreds of specialized components and integrated door and window sealing systems. Zero's



6. Solving hinge problems is often accomplished through the installation of a continuous hinge system such as Zero's UNIGEAR pictured above.

engineers are available for consultation and expert technical assistance in identifying appropriate solutions for specific door opening problems and scenarios.

For more information or a copy of Zero's 1995 catalog, contact: Zero International, 415 Concord Avenue, Bronx, NY 10455-4898; Phone (800) 635-5335 or (718) 585-3230; Fax (718) 292-2243.

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by
Jake Jakubowski

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All-Lock Foreign Service Kit Winner GM 10-Cut Progression Chart

Here's a progression chart that will allow you to generate an operating ignition key for the new Chevrolet S-10 pickup truck once you have determined the cuts needed to operate the door lock.

The first thing that you need to do is remove the door lock and decode the cuts for that lock. This lock removes in a similar manner to all newer GM trucks with the door lock cylinder in the door handle, but is easier to remove and re-install as there is no inner steel panel to contend with.

The same key operates both the door and the ignition on these vehicles with cuts 6, 7, 8, and 9 being common to both locks. Cut 10 is used only in the door cylinder as can be seen in table one.

Cut 1 does not, according to the codes that I have seen, utilize a 4 depth. Cuts 2 and 3 are not used. Consequently, that leaves cuts 4 and 5, two of the unknown cuts to be progressed to obtain a working key for this vehicle.

To make a working key for this vehicle do the following:

First, decode the door lock which will

give you the depths for spaces 6, 7, 8, 9, and 10.

Next, cut the decoded depths only on one side of the key.

Now, use the chart shown in table two to generate a working key for the ignition using the following rules:

If the known depth in the sixth space is a 1, eliminate all combinations where the fifth cut is a four depth (a one and a four depth never appear side by side). Like all GM locks, these locks have a MACS of two. Unlike standard GM locks, the total sum of the depths can add either even or odd on these 10-cuts.

If the sixth depth is a 4, then eliminate all the combinations in the chart where the fifth cut is a 1. This will save you some time in your progression sequence by eliminating about 18 possible combinations.

Brad Mackenziet
Ohio

ED. NOTE: The lock that Brad is addressing is GM's new 1995 GM 10-cut ignition used on the Blazer, Suburban and small pickups using

Table 1

Spaces:	1	2	3	4	5	6	7	8	9	10
Ignition:		-	-							
Doors:						D	D	D	D	D

Progression Chart

Key#1 - Side A

Space	1	2	3	4	5
1	-	-	1	1	
1	-	-	1	2	
1	-	-	1	3	
1	-	-	2	3	
1	-	-	3	3	
1	-	-	4	3	
1	-	-	4	4	
2	-	-	4	4	

Key #1 - Side B

Space	1	2	3	4	5
1	-	-	2	1	
1	-	-	2	2	
1	-	-	2	4	
1	-	-	3	4	
2	-	-	3	4	
3	-	-	3	4	

Key#2 - Side A

Space	1	2	3	4	5
1	-	-	3	2	
1	-	-	4	2	
2	-	-	4	2	
3	-	-	4	2	
3	-	-	4	3	

Key #2 - Side B

Space	1	2	3	4	5
1	-	-	3	1	
2	-	-	3	1	
2	-	-	3	2	
3	-	-	3	2	

Table 2

Key #3 - Side A

Space	1	2	3	4	5
2	-	-	1	1	
2	-	-	1	2	
2	-	-	1	3	
2	-	-	2	3	
2	-	-	2	4	

Key #3 - Side B

Space	1	2	3	4	5
2	-	-	2	1	
2	-	-	2	2	
3	-	-	2	2	
3	-	-	2	3	
3	-	-	2	4	

Key #4 - Side A

Space	1	2	3	4	5
3	-	-	1	1	
3	-	-	2	1	
3	-	-	3	1	

Key #4 - Side B

Space	1	2	3	4	5
3	-	-	1	2	
3	-	-	1	3	
3	-	-	3	3	

locks that are manufactured from July 1994 through September 1994.

The original version of this lock employed tumblers in positions 1 through 9. Design enhancements during the July 1994 through September 1994 period, however,

eliminated positions 2 and 3. All nine positions were included in the locks both before and after this time.

Brad's tip and progression chart are not applicable to those locks manufactured outside of this time frame.

STRATTEC Pinning Kit And Jacket Winner

Break Away Bolt Removal

I know that many tips have been submitted regarding the removal of the break-a-way bolts on most foreign

car ignitions. However, I think that I have found a fast, simple and effective way to accomplish the procedure that will allow you to re-use the same bolts (in a pinch) if necessary.

I first drill a 5/32" hole in the

center of the bolt, approximately 3/16" deep Then I use a small hammer to drive a T25 Torx bit from a magnetic screwdriver into the hole until it bottoms out. Then, using a 1/4" wrench, socket or off-set ratcheting wrench, I remove the bolt quickly and easily.

When the ignition is ready to re-install, the same bolts can be used to fasten it to the column if you are out of replacement bolts. However, I recommend re-using the old bolts only in an emergency and replacing them as soon as possible.

If, when replacing the old bolts with new ones the Torx driver strips out of the hole as you're trying to remove the old bolts, just go to the next size driver and force it into the hole.

T. L. Cold
Canada

American Lock And Supply
Merchandise Certificate Winner
Simple Mortise Repair

I was called to service the locks on a solid glass store front door. The manager had called another locksmith who had told her that the set screw

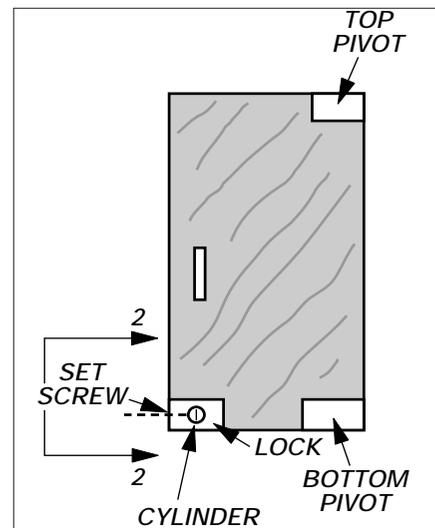


Illustration 3.



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that held the cylinder in place was broken and in order to service the lock, the door would have to be taken down and would cost the store about \$200 to repair.

The lock on this type of door is mounted in a small block of steel cladding that is mounted on the lower left corner of the door and is called a "Patch" by the manufacturer. (See *illustration 3.*) After examining the door, I determined that the door would not have to be taken down and that the lock could be removed for servicing by following the procedures:

First loosen the set screws that are accessible through two holes in the end (door edge) of the face plate or cladding. Then, unscrew the cylinders as you would any standard mortise type cylinder.

The next step is to release the cladding from the door by pushing in on the two spring loaded pins that are located close to the set screw holes. When the pins are depressed, the stainless steel cladding can be removed by pulling the cladding from the end of the door. (See *illustration 4.*)

You have now exposed the four screws (two on each side) that hold the two halves of the patch to the door and the two screws on each side that hold the lock to the patch plates. By removing the screws holding the lock to the patch on the side which had the broken set screw, you can then access the set screw with (in this case) a pair of needle nose vise grip pliers and remove it.

Replace the broken screw with a new one. Reinstall the patch back on the glass (but leave it loose). Then using a screw driver throw the lockbolt into the dust proof strike to make sure it is properly aligned. This often takes a fair amount of adjustment. Next tighten the patch

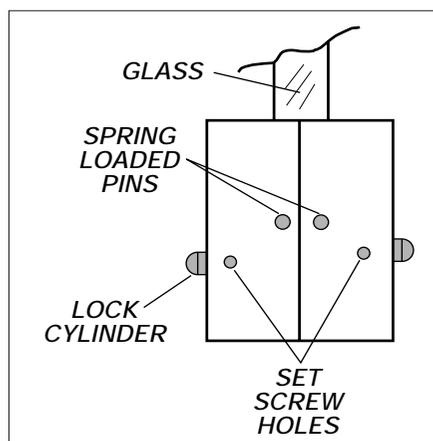


Illustration 4.

and lock screws, put the cladding back on, put the cylinders back in place, replace the retaining screws, collect your money and go on to the next job.

It takes about half an hour to do this service and there is no heavy lifting involved.

Billy Jackson,
Texas

HPC Pistol Pick Winner
Deadbolt Aligner

Installing deadbolts and cylindrical locks into a door is not a difficult task. However, lining up and positioning for the hole in the jamb to receive the bolt can be time consuming.

To be on target every time for both the latch and the bolt, I have taken a deadbolt, cut 10mm off the end to expose the hardened steel pin; then I grind the pin to a point central to its diameter. (See *illustration 5.*) Finally, I bevel the edge of the remainder of the bolt sufficiently to prevent it from catching on the bolts casing.

Its use is now very obvious. After preparation to the door is complete for both the lock and bolt, insert the doctored bolt where the latch or bolt will go. The, with the aid of a screwdriver, force the point of the

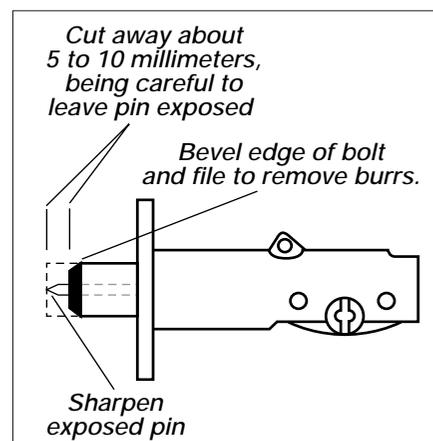


Illustration 5.

hardened pin into the jamb. Here is a clear center to drill for mounting the strike plate and to receive the bolt or latch when thrown.

Tony Vinton,
New Zealand

Silca Rubberheaded Keyblanks
Winner

Datsun/Nissan Lock Repair

I receive a lot of calls to replace the C-16 series Datsun and Subaru ignition locks with the X-7 and X-6 keyways. The locks stop working when the shoulder stop wears away (on both the lock and the key) and the key bottoms out past the proper space alignment.

When I replace one of these ignitions I modify the new cylinder to prevent the problem from reoccurring and at the same time give the owners the advantage of a conventional shoulder stop and a tip stop.

I put liquid steel or a similar product in the end of the new plug at point A in illustration six. I put enough in it to make sure that the tip of the key bottoms out and forms the "<" shaped indentation necessary for the key to butt up against. I hold the liquid steel in place with my thumb while pressing the proper blank firmly against it until it hardens.

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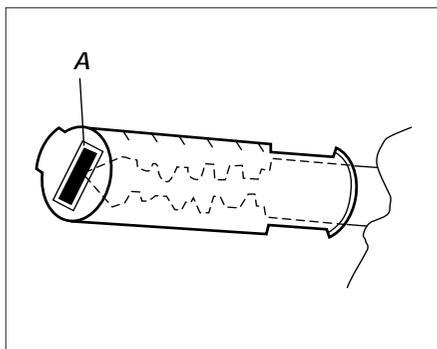


Illustration 6.

Once the new tip stop has solidified, I remove the blank and then reinsert it to make sure that all the wafers come to the shearline. To keep the key from sticking to the liquid steel, I spray a blank with WD-40 or TriFlow.

This simple modification prevents the shoulder wear problem from reappearing at a later date and does not require much effort.

Tom Spangler
Oregon

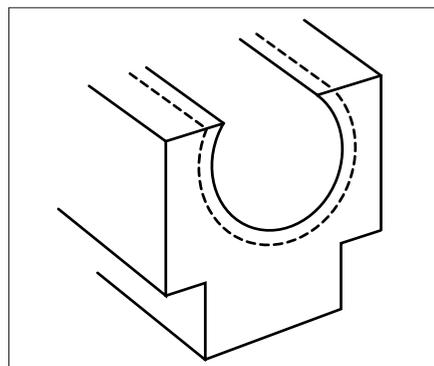


Illustration 7.

Seiveking EZ GM Wheel Puller Winner
Ford 10-Cut Ignition Tips

When servicing the 10-Cut Ford ignition cylinder, I replace the older style plugs with a new service package because the newer style plugs use two horizontal plugs to stake the spring retaining cap down. I doubt that you will see many of these caps fail due to the cap coming unstaked. To help me service these plugs, I use a modified Keedex K-7 Lock Block to hold the plug. (See illustration 7.)

To modify the K-7 Lock Block, place a 10-pin plug in the block, mark the outline on the face of the block and rout out the outline

I use a metal rasp chucked into my Dremel 732 Flex Shaft that I added to my service van last year. I don't know why it took me seven years to add a Dremel. I have found out just how handy this tool can be for so many tasks necessary in my daily routine.

As for speeding up the process of removing the ignition cylinders with try-out keys, I color code my tryouts. I use fingernail polish to paint the bow of the key. With the tip of the key in my right hand, the left half of the bow represents the 5th space and the right half represents the 6th space.

I use white polish for any one or two depth. Red for any three or four depth, and blue for the fifth depth.

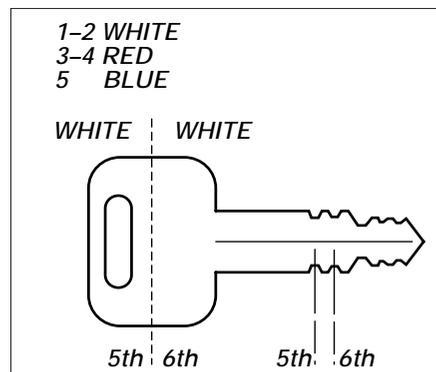


Illustration 8.



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Knowing the depth in the 5th and 6th space of the door now narrows the selection of tryout keys. (See illustration 8.)

To decode the door lock, I remove the lock and using an uncut Ford blank, read the wafers in the lock through the drain hole.

Leo Koulogianes
Tennessee

A-1 Manufacturing's Quick Pull Winner
Master #40 Padlock Removal

A customer brought me a Master #40 padlock (with a rotating shackle) that could not be unlocked with the original key. The key only started to turn the shackle and would bind up. Apparently, the cam on the rear of the plug had come loose and jammed the mechanism. Since the lock was attached to a specialized hasp, the customer wanted it removed.

To solve the problem, I completely drilled out the locks plug. Then I pushed the remainder of the cylinder to the left of the opening in the lock case. (See illustration 9.)

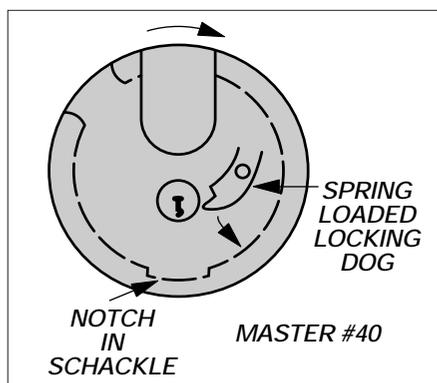


Illustration 9.

Looking to the right of the hole I just drilled, I could see the notched end of the locking dog. With a small screwdriver I pushed down on the notch which released the shackle. Then I used a small screwdriver with a 90-degree bend in it to rotate the shackle clockwise until it opened.

The opening was fairly quick and easy. The only thing I had to watch was that the locking dog, which is spring loaded, did not re-engage before I could rotate the shackle to the open position.

James Troeller
California

Major Manufacturing Safe Hinge Kit Winner

Paper Clip Key Shim

When I have a key that will not seat

properly in the vise of my duplicator because of the milling pattern on the blank, I use a Jumbo type paper clip to keep it from tipping.

Simply straighten one end of the paper clip and file the cut end to eliminate any burrs that may be on the clip from the manufacturing process, place the straightened leg above or below the key as necessary and tighten down the machine's vise to securely lock in the most difficult key.

The other end of the jumbo paper clip makes a convenient handle to grab your shim by. This tool is also great for pushing in retainers on older GM and Ford locks and as a multi-purpose poke tool.

Lee Whiteford
California

Jake's Grabbag Prize Winners
Bit Key Removal

The other day an elderly lady called me to get her key unstuck. When I got there, I found a bit key bound up in an old mortise lock.

The lady had used the wrong key which, although it unlocked the door, the bolt was not completely withdrawn. When my customer noticed this, she pushed the bolt back into the lock and effectively trapped the key.

It was the only copy of that key that she had and since it fit other locks in the house, I could not simply break it off and repair the lock. To salvage the key without damaging the lock during this late night call, I drilled a 1/8" hole into the center of the bolt, screwed in

Continued on page 114

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(The Good, The Bad, And The Ugly)

GUN SAFE ACADEMICS

*Selling gun safes demands knowing the "good" from the "bad."
Here's a short lesson on what you and your customer should watch for.*

by James Skousen

Until recently, the driving force behind the surging safe sales has been gun owners. But with increasing crimes non-gun owners are just as concerned with the security of their prized possessions. This past year, the gun safe industry has seen a transition to a much broader range of customer. Instead of "gun" safes, consumers are asking for "home" safes with varying interior styles. It's more than just the sportsman who wants to lock up his guns. Now the buyer includes everyday people looking to secure not just guns, but jewelry, cameras, cash, coins and collectibles. Gun safes, once considered a novelty, have now become a commodity by today's business standards.

Reasons Consumers Give For Buying Home Safes

The number one reason to buy a home safe is security, and guns are at the top of the list. According to police reports, guns and ammunition are the first items stolen in a home burglary, with only two percent ever recovered.

When do these burglaries most often occur? Surprisingly, it's between 10 a.m. and 2 p.m. when many people are at work. Most burglaries are the "smash and grab" type (taking less than 12 minutes), and are performed by teenagers or young adults.

Interestingly enough, the reports also indicate that when a home safe is found during the break-in the safe is usually untouched for fear of finger print identification. Even better, because common sense would say that anything of real value in the home would be in "that safe" most thieves resort to saying: "Let's go to the next house." Even with safe cracking tools, the time and noise factors almost always deter the burglars from attacking the safe.

Security is perceived by the buyer both through tangible as well as intangible attributes. An intangible attribute may include the name brand

BAD - "Shot in the head by her 5-year-old brother, Michelle, 3, died today."
UGLY - "The father believed the gun was out of reach."

or overall appearance. Tangible attributes include:

- U.L. Listing — Since 1921, Underwriter Laboratories has tested the security of safes under 10 different ratings. Home Safes are classified as Residential Security Containers when they pass U.L.'s four stringent tests. Hired professional safecrackers are

employed to drill, hammer, chisel, pry, punch and tamper in every way possible to defeat the safes security. The safes that pass all four timed tests bear the U.L. label of security

- Overall Weight — Customers look at the overall weight as part of the security makeup of the safe. The heavier the safe the more "time they



1. Door thickness is just one of many considerations in helping a customer choose a home or gun safe.

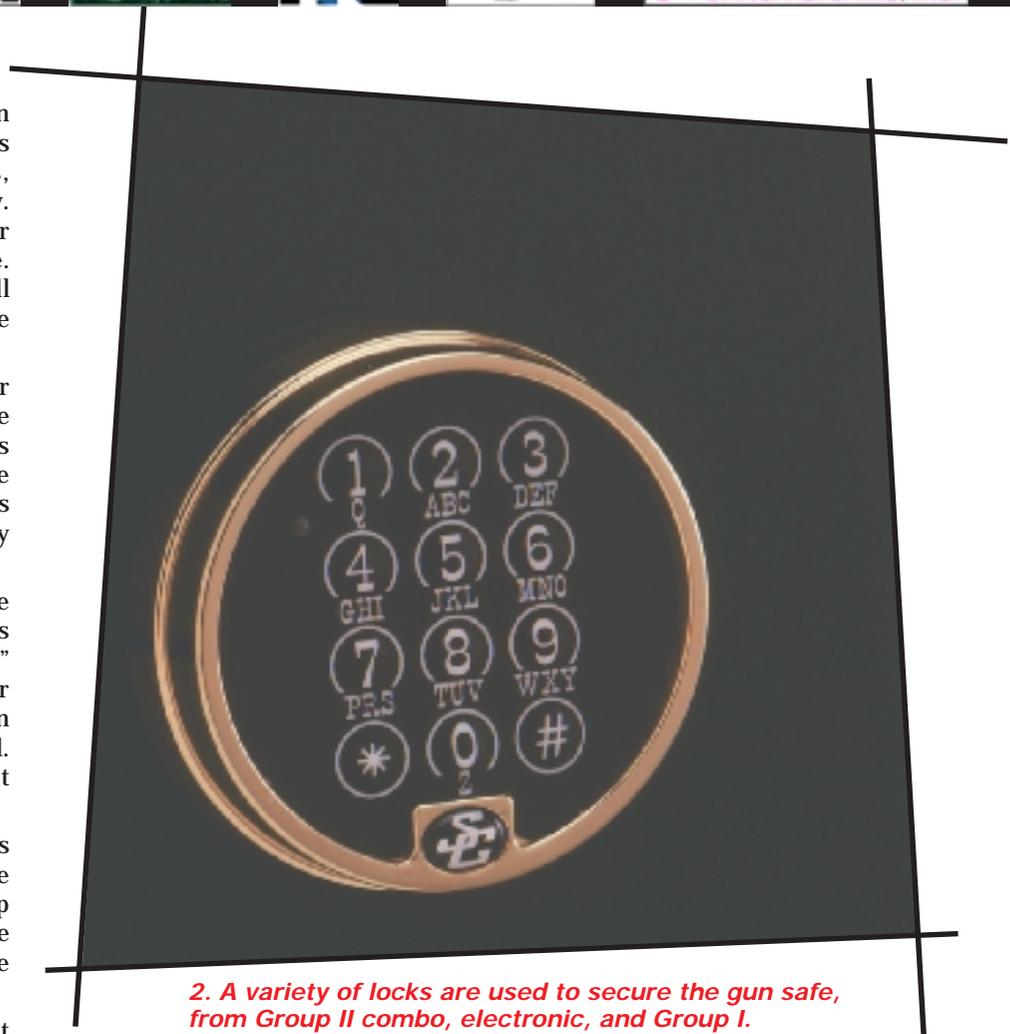
are buying” when a thief makes an attempted break-in. With weights ranging from 300 to 1700 pounds, safes are hard to defeat or haul away. Anchoring the safes to the floor prevents any movement of the safe. Fire protection and the interior will also add to the overall weight of the safe.

- **Door Thickness** — Door thicknesses vary from 3/16” to 1”. The makeup of door thicknesses is designed to prevent any prying of the door edge. Many safe manufacturers recess the front door to virtually eliminate prying. (See photograph 1.)

- **Body Thickness** — Gun safe manufacturers use steel bodies ranging from 12 gauge (.105”) to 1/4” thick bodies. One of Underwriter Laboratories tests includes an attempted entry through the side wall. Obviously, thicker bodies make it more difficult to drill, punch or saw.

- **Combination or Electronic Locks** — Gun safe manufacturers use primarily Sargent & Greenleaf Group II locks. Some manufacturers use ILCO and LaGard. Group I locks are also available. (See photograph 2.)

- **Number of Relockers** — Most



2. A variety of locks are used to secure the gun safe, from Group II combo, electronic, and Group I.

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3. Hinges are another security consideration. The hinges on this safe reveal interior hinges, protecting them from being tampered with.

fully hardened throughout and is much tougher to drill.

- **Gear Drive And Cam Drive** — The majority of safes come standard with cam drives, which is a direct drive mechanism activating the locking bolts. Some of the higher end safes upgrade their models with a gear drive locking system, which in some cases includes a slip-clutch or shear-pin mechanism that prevents damage to the mechanism in an attempted break-in.

- **Internal Or External Hinge** — Security is often talked about with hinges. Internal hinges prevent the common hinge attack. External hinges may be defeated, however, this may not necessarily breach the security of the safe. Additional door bolts on the hinge side of the door may slow down entry. (See photograph 3.)

- **Warranty** — Several manufacturers warranty their safes with a life time guarantee to replace or repair a safe if entry is made. Some manufacturers are now including an

gun safe manufacturers use one to three relockers in their safes to protect against drilling and torching the locking mechanism and defeating the lock. Some manufacturers use a third separate relocker that will lock up the cam drive if the lock is punched.

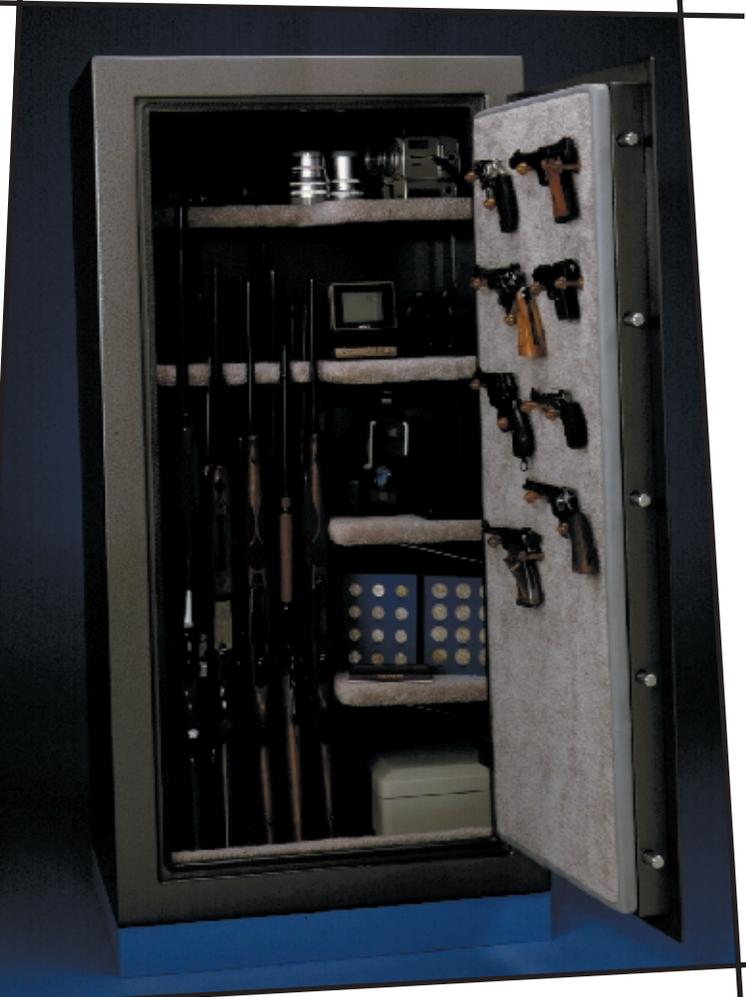
- **Door Bolt Size** — Door bolts range in diameter size from 1/2" to 1 3/16". These are activated from the cam or gear drive mechanism. Some manufacturers use independent locking bolts or sheer pins to prevent any side punching of the bolts.

- **Number Of Active Bolts** — most safes use active bolts on both the hinge side as well as the non-hinge side. Some manufacturers use a non-active locking system on the hinge side. Active bolts can be on both sides of the door, on both sides plus the top, and on all four sides.

- **Shielded Bolts** — Additional hard plate is added to the sides to prevent side punching of the door bolts.

- **Hardplate** — Hardplate is located behind the door plate to slow down drilling into the lock. Two types of hardplate are used—case hardened or fully hardened. Case hardened has two outside surfaces of hardened steel (rated at RC60 and above) with a soft core. Fully hardened hardplate, known as Martensitic hardplate, is

4. Like automobiles, a variety of options exist for both the security and convenience of the customer.



Continued from page 98

attempted break-in warranty as well. This means if a thief damages but fails to break into the safe, the manufacturer will still repair the safe.

• **Protection From Fire** — According to the National Fire Protection Association, fire strikes in America every 51 seconds causing nearly \$9 billion in yearly damages. The effects of fire can be more devastating than theft because it leaves only blackened outlines of one's valuables, with no hope of recovery. Although fire protection was not that big a concern 10 years ago, today it's included in most home safes.

Most home safes use a fire-code gypsum on the inside walls of the safe to protect the safe's contents from the average home fire of 1200 degrees for 30 minutes. For added protection, most manufacturers can double the amount of protection and then seal both layers with another inside metal liner for added temperature protection to the safe's interior. Independent Laboratory testing can certify the actual temperatures inside the safe.

• **Aesthetics** — Home safes today take on a whole new look. Most display a beautiful car-like finish in a variety of up to 10 colors to match any

decor. Safes that were once intended to go in a closet or in the garage are now being displayed in the family room or den, replacing the traditional glass cabinets.

The interior of the safe generally comes in many styles. Carpet covered interiors are most popular, followed by velour and other fabrics. Other options to accommodate gun space would include a pistol rack or shelves for handguns to free up shelf space. Dehumidifiers can also be installed to eliminate any moisture build up that would cause rusting to guns and other valuables. (See photograph 4.)

• **Convenience** — Many are switching from a safe deposit box to the convenience and added privacy of a home safe. Securing valuables in the bank means a trip during business hours only, Monday through Friday (never on holidays), having the right key, facing security checks and limited space.

With a home safe, quick and convenient access is available in the privacy of one's home. Home safes also offer an economical alternative to expensive business-type safes. These freestanding or floor safes were smaller and had limitations when

trying to fit any number of long rifles. When gun safes came along, they satisfied the demands of home security (heavy and difficult to break into), adequate size (spacious enough to store most valuables) and affordable pricing (between \$500 and \$3000). Home safes offer a common sense approach to home security needs. In fact, customers are returning to buy a second safe—one for storing firearms, and another for storing personal valuables.

The desire to protect one's property from theft and destruction has been strong throughout the ages. Today is no different. Like our ancestors, we want to preserve our valuables, collectibles, and priceless mementos from would-be burglars, as well as protect our family and guests from accidental firearm injuries. Home safes add a measure of security that cannot be found any other way.

The author is Marketing Director for Liberty Safe and Security Products Inc., 1060 N. Spring Creek Place, Springville, UT 84663, (800) 247-5625.

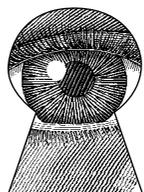
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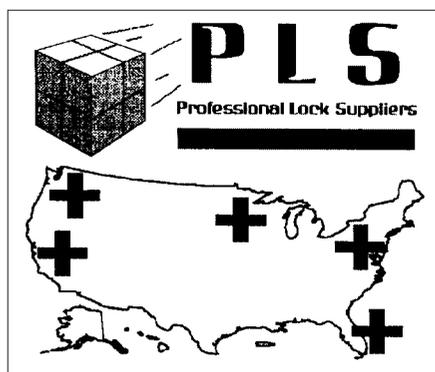


A Peek at Movers & Shakers in the Industry

ATTENTION MANUFACTURERS AND DISTRIBUTORS: Would you like your company and products to be profiled in *Thru The Keyhole*? Please call Managing Editor, Tom Seroogy at (708) 837-2044.

P.L.U.S. Distribution Group

The P.L.U.S. Distribution Group Inc. is proud to announce their formation. The group consists of five distinctive distributors throughout the U.S. that supply the entire North American locksmith industry. The five members are: Locks Company, Miami, Florida (800) 288-0801; Maziuk Syracuse, New York (800) 777-5945; H.E. Mitchell Company,



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The Protector Lever Conversion

Advanced Hardware Technologies of Charlotte, North Carolina is a new company founded in the fall of 1994, inspired by the Americans with Disabilities Act. The company's founder Norman Millman set out to design and patent a product that would permit the conversion of ANSI

Grade 1 and ANSI Grade 2 knobsets to levers. At the same time Millman was looking for a way to strengthen the lever lockset product.

By crowbarring or wrenching the knob or lever can easily be ripped loose from the lock or spindle. Once the lever has been torn from the lock the door can easily be opened. As levers have come into common use the problem becomes accentuated because of the amount of torque a lever offers.

Advanced Hardware Technologies lever conversion kit, known as The Protector, offers a solution to two problems. First, it permits the conversion of ANSI Grade 1 and ANSI Grade 2 knob locksets to lever locksets, thereby complying with the ADA requirement. It does this in a manner that preserves the existing lock body latch and cylinder mechanisms.

Protector replaces the existing trim with heavy duty levers that are through bolted onto the door and that virtually encase the existing lock body in an armored shell. Once installed the Protector trim engages the lock spindle. Because the Protector has a positive stop and shock absorbing spring built into the trim, the lock unit

is impervious to stress or abuse that may be applied to the lever handle.

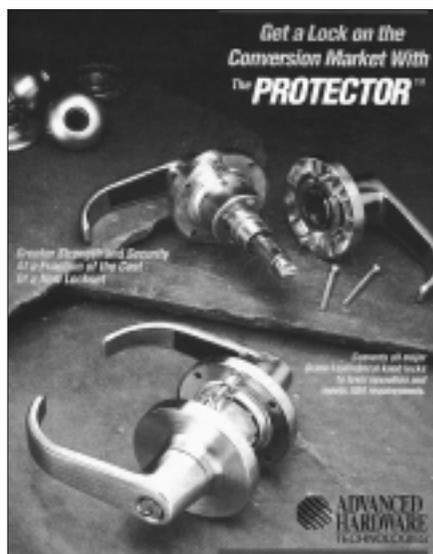
A large advantage for the building owner is that the retrofitting of his existing hardware with the Protector Kit can be accomplished at about one-half the price of a new Grade 1 lever lockset.

Protector kits are available now for ANSI Grade 1 Schlage, Arrow, Best, Corbin and Russwin knob locksets. Following shortly will be kits for Sargent and Yale. All come in an assortment of finishes including US26D-Satin Chrome, US3-Polished Brass, US4-Satin Brass, US10-Satin Bronze and US10B-Oil Rubbed Bronze. AHT plans to add a full line of Mortise lock conversion kits in the first half of 1995 and a Grade 2 cylindrical lever conversion kit by the summer of this year.

Advanced Hardware Technologies lever conversion kits are complimented by a full lockset version in Grade 1 form that comes complete with the cylinder, lock body, latch bolt and Protector levers. This unit makes an ideal security upgrade for jobs where the locks are expected to take extra abuse or where security is a problem. The full lock version also compliments the conversion kits. In the full lock form you have a product that is particularly durable and strong, offering extra security to the end user.

At this point AHT has tested their product extensively and submitted product to independent test laboratories for confirmation. AHT testing indicates a product that far exceeds ANSI standards and BHMA standards for Grade 1 lever sets where wrenching or crowbarring is involved; withstanding up to 1350 pounds of force versus the 500 pound required to pass the test.

Advanced Hardware Technologies has received U.L. certification for the Protector kit and full lock version and has a policy of selling through





established Locksmith Supply Distributors only. Product literature and list price information may be obtained through your distributor or by contacting AHT directly at (800) 277-9377.

Monaco Lock Company, Why Are We Different?

When I was asked to write a short article on how Monaco Lock Company is different from other distributors, I decided to go back to our root philosophy of keeping the needs of our customers as our priority.

Inventory

The Primary function of a stocking distributor is to keep inventory on hand to meet the needs of the customers. This is important so our customers are able to service their own customers immediately.

To do this we must keep a substantial inventory on hand to meet this immediate demand; as we do. We keep the manufacturers complete line on hand, even uncommon items, replacement parts, and special finishes.

Customer Service/Family Spirit

As a second generation family owned business, Monaco Lock has

always striven to adhere to its original philosophy and spirit. Over the course of 28 years in business you get to know a lot of people and establish many relationships. For us business means people; customers and employees that have helped make us successful.

As a Monaco Lock customer you will see this family atmosphere in the way our phone lines are answered, orders handled, problems resolved, and the way we go the extra step to make sure you're satisfied. We treat you like family because customer service is our priority.

With the close relationships we have established with our vendors through the years, combined with our drive to service you, we feel we provide some of the best service in wholesaling today.

Electric Lock Specialist

We are a pioneer of the wholesale distribution of electrical locking devices. This is our specialty. We carry quality lines that have proven themselves in the market place over the course of time. Specializing in these lines gives us an in-depth product knowledge; we have carried some lines since we started in business.

Because of this focus, we offer some of the best technical support that a wholesaler can. We have over 28 years of hands on experience with the product; we don't just handle boxes.

Value Added

We also offer some added services that we keep updating as the times and our customers needs change. These include:

- Visa/Mastercard
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Inventory, customer service, focus, and value added services are at the heart of our business and have made us successful not only back when there were only a handful of distributors around, but also today in this competitive business environment. We have worked very hard to earn our reputation and today we are known throughout the United States. For more information contact Monaco at (800) 526-6094 or fax (800) 845-LOCK. 

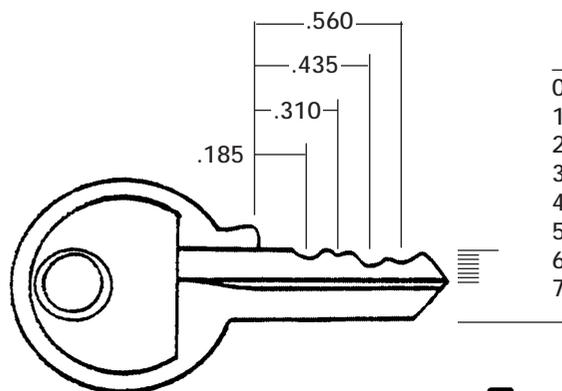
The National Locksmith Price Survey: 1995

	Average	High	Low				
Service Call	\$27.88	\$40.00	\$12.00	First Key By Code	\$7.91	\$15.00	\$4.00
Hourly Rate	\$42.15	\$65.00	\$25.00	Domestic Single Cut	\$11.29	\$18.00	\$5.00
Key Duplication				Domestic Double Cut	\$10.92	\$17.50	\$5.00
Domestic Single Sided	\$1.39	\$2.25	\$0.95	Foreign Single Cut	\$13.63	\$19.00	\$5.00
Domestic Double Sided	\$2.12	\$3.50	\$1.00	Foreign Double Cut	\$38.33	\$50.00	\$20.00
Foreign Single Sided	\$2.39	\$5.00	\$0.95	Foreign Sidewinder	\$10.10	\$15.00	\$5.00
Foreign Double Sided	\$2.99	\$9.00	\$1.00	Flat Steel	\$13.51	\$20.00	\$3.50
Flat Steel	\$3.41	\$5.00	\$1.50	Flat Steel Double Cut	\$7.31	\$12.50	\$2.00
Flat Steel Double Sided	\$4.74	\$10.00	\$2.00	Suitcase	\$13.25	\$16.50	\$7.00
Tubular	\$4.58	\$10.00	\$2.80	Tubular	\$16.45	\$25.00	\$12.00
Bit Key	\$6.01	\$12.00	\$2.10	Safe Deposit Box	\$11.93	\$18.00	\$6.00
Safe Deposit Box	\$5.27	\$15.00	\$2.50	Motorcycle			
High Security	\$8.98	\$20.00	\$5.00	First Key	\$14.81	\$29.00	\$7.50
Best	\$5.08	\$15.00	\$1.50	By Impression	\$13.58	\$22.00	\$5.75
Key From Broken Key (Add'l)	\$2.20	\$5.00	\$0.75	By Reading			
Rekey/Change Combo/1st Key				Padlocks			
Key In Knob	\$10.62	\$44.00	\$5.00	Combination By Code	\$4.50	\$12.00	\$1.00
Rim/Mortise Cylinder	\$10.56	\$44.00	\$5.00	First Key Pin Tumbler	\$9.60	\$20.00	\$5.00
Pick Open Cylinder	\$8.18	\$49.00	\$1.00	First Key Wafer	\$9.61	\$20.00	\$5.00
Each Add'l Key	\$2.00	\$5.00	\$1.00	Pin Tumbler By Code	\$7.31	\$12.00	\$4.00
Rim/Mortise, High Security	\$21.04	\$59.00	\$10.00	Key Stamping Per Line	\$0.44	\$1.00	\$0.10
Bit Keys	\$11.29	\$33.00	\$3.00	Best First Key	\$15.05	\$34.00	\$3.50
Best	\$16.04	\$25.00	\$6.50	High Security First Key	\$14.75	\$30.00	\$7.00
Safe Deposit Box	\$17.85	\$49.50	\$6.50	Door Closers			
Locker Lock	\$11.50	\$33.00	\$3.50	Repack & Refill Overhead Surface Type	\$41.67	\$50.00	\$25.00
Tubular	\$13.75	\$33.00	\$3.50	Floor Checks	\$66.67	\$130.00	\$35.00
Auto Locks				Safes			
Fit Key GM VATS	\$90.79	\$200.00	\$30.00	Drill Locked Safe	\$179.30	\$250.00	\$120.00
Pull GM Wheel (In Shop)	\$31.73	\$50.00	\$25.00	Manipulate Locked Safe	\$148.83	\$300.00	\$45.00
Air Bag (Add'l)	\$42.33	\$50.00	\$35.00	Change Combo (Key Change)	\$35.67	\$96.00	\$15.00
Telescoping Wheel (Add'l)	\$19.10	\$45.00	\$10.00	Change Combo (Hand Change)	\$42.72	\$96.00	\$20.00
Obsolete Auto Lock	\$31.86	\$50.00	\$20.00	Door Repair	\$78.25	\$150.00	\$45.00
Foreign Door & Trunk	\$31.79	\$130.00	\$9.00	Move Safe	\$90.00	\$150.00	\$45.00
Foreign Ignition	\$31.33	\$75.00	\$10.00				
Motorcycle	\$23.95	\$35.00	\$10.00				



KEY CODES

Master Large Pin 1-3200



Depths	
0	- 0.275
1	- 0.260
2	- 0.245
3	- 0.230
4	- 0.215
5	- 0.200
6	- 0.185
7	- 0.170



HPC 1200 CM
Code Card - C35
Cutter - CW1011
Stop - Shoulder

Framon
Cut start - .187"
Cutter - FC8445
Cut to cut - .125"
Spacing Block #1
Stop - Shoulder

Key Blanks
Master 1K
Iico 1092
Silca M52
Jet M1

Compatible Codes for this Chart

1-3000	10N1-1000
10T01-1000	2001-2750
34H601-1000	35H401-850
5001-5500	6001-6750
8001-8500	A101-2000
E1-700	J2001-2150
J3U00-J5U49	U1-3250
W1-3500	X5001-5500
10L01-1000	10R01-18R00
1U0-25U9	3201-4000
35H251-300	4201-5000
5501-6000	7001-8000
9001-10000	A5501-6400
E2001-3000	J301-1250
0301-950	USN1-600
X2001-3000	

Readers:

As you can see, a great number of these codes are unknown. If you know the bitting for any of these codes send them in! We'll share the results with you.

Write us or E-mail to: natllock@aol.com

2001	6233	2031	5451	2061	3233	2091	3455	2121	6334	2151	4246
2002	5341	2032	5556	2062	3344	2092	3623	2122	6443	2152	4353
2003	5445	2033	3231	2063	3453	2093	6332	2123	4244	2153	4462
2004	5553	2034	3342	2064	3621	2094	6441	2124	4351	2154	4565
2005	3225	2035	3451	2065	6326	2095	4242	2125	4455	2155	5252
2006	3336	2036	3563	2066	6435	2096	4345	2126	4563	2156	5356
2007	3445	2037	6324	2067	4236	2097	4453	2127	5246	2157	5465
2008	3554	2038	6433	2068	4343	2098	4556	2128	5354	2158	5625
2009	6322	2039	4234	2069	4451	2099	5244	2129	5463	2159	3244
2010	6431	2040	4341	2070	4554	2100	5352	2130	5623	2160	3355
2011	4232	2041	4445	2071	5242	2101	5456	2131	3242	2161	3512
2012	4335	2042	4552	2072	5346	2102	5621	2132	3353	2162	3632
2013	4442	2043	5236	2073	5454	2103	3236	2133	3463	2163	6341
2014	4546	2044	5344	2074	5564	2104	3351	2134	3626	2164	6446
2015	5234	2045	5452	2075	3234	2105	3456	2135	6335	2165	4251
2016	5342	2046	5556	2076	3345	2106	3624	2136	6444	2166	4354
2017	5446	2047	3232	2077	3454	2107	6333	2137	4245	2167	4463
2018	5554	2048	3343	2078	3622	2108	6442	2138	4352	2168	4566
2019	3226	2049	3452	2079	6331	2109	4243	2139	4456	2169	5253
2020	3341	2050	3564	2080	6436	2110	4346	2140	4564	2170	5362
2021	3446	2051	6325	2081	4241	2111	4454	2141	5251	2171	5512
2022	3562	2052	6434	2082	4344	2112	4562	2142	5355	2172	5626
2023	6323	2053	4235	2083	4452	2113	5245	2143	5464	2173	3245
2024	6432	2054	4342	2084	4555	2114	5353	2144	5624	2174	3356
2025	4233	2055	4446	2085	5243	2115	5462	2145	3243	2175	3513
2026	4336	2056	4553	2086	5351	2116	5622	2146	3354	2176	3633
2027	4443	2057	5241	2087	5455	2117	3241	2147	3464	2177	6342
2028	4551	2058	5345	2088	5565	2118	3352	2148	3631	2178	6451
2029	5235	2059	5453	2089	3235	2119	3462	2149	6336	2179	4252
2030	5343	2060	5563	2090	3346	2120	3625	2150	6445	2180	4355



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2181	4464	2238	4625	2295	5313	2352	5426	2409	5542	2466	3442
2182	4621	2239	5263	2296	5422	2353	5534	2410	5662	2467	3351
2183	5254	2240	5413	2297	5526	2354	5651	2411	3323	2468	4212
2184	5363	2241	5522	2298	5643	2355	3314	2412	3434	2469	6424
2185	5513	2242	5635	2299	3263	2356	3426	2413	3543	2470	6533
2186	5631	2243	3254	2300	3422	2357	3535	2414	6544	2471	4332
2187	3246	2244	3413	2301	3521	2358	3662	2415	6415	2472	4435
2188	3362	2245	3523	2302	3651	2359	6622	2416	6525	2473	4543
2189	3514	2246	3642	2303	6355	2360	6521	2417	4324	2474	4654
2190	3634	2247	6351	2304	6512	2361	4315	2418	4431	2475	5335
2191	6343	2248	6456	2305	4266	2362	4423	2419	4535	2476	5443
2192	6452	2249	4262	2306	4414	2363	4531	2420	4646	2477	5551
2193	4253	2250	4365	2307	4523	2364	4642	2421	5331	2478	3334
2194	4356	2251	4514	2308	4634	2365	5323	2422	5435	2479	3443
2195	4465	2252	4626	2309	5314	2366	5431	2423	5543	2480	3552
2196	4622	2253	5264	2310	5423	2367	5535	2424	4663	2481	4223
2197	5255	2254	5414	2311	5531	2368	5652	2425	3324	2482	6425
2198	5364	2255	5523	2312	5644	2369	3315	2426	3435	2483	6534
2199	5514	2256	5636	2313	3264	2370	3431	2427	3544	2484	4333
2200	5632	2257	3255	2314	3423	2371	3536	2428	6545	2485	4436
2201	3251	2258	3414	2315	3432	2372	3663	2429	6421	2486	4544
2202	3363	2259	3524	2316	3652	2373	6412	2430	6526	2487	6536
2203	3515	2260	3643	2317	6356	2374	6522	2431	4325	2488	5336
2204	3635	2261	6352	2318	6513	2375	4321	2432	4432	2489	5444
2205	6344	2262	6462	2319	4312	2376	4424	2433	4536	2490	5552
2206	6453	2263	4263	2320	4415	2377	4532	2434	4651	2491	3335
2207	4254	2264	4366	2321	4524	2378	4643	2435	5332	2492	3444
2208	4362	2265	4515	2322	4635	2379	5324	2436	5436	2493	3553
2209	4466	2266	6431	2323	5315	2380	5432	2437	5544	2494	4224
2210	4623	2267	5265	2324	5424	2381	4426	2438	4225	2495	6426
2211	5256	2268	5415	2325	5532	2382	5653	2439	3325	2496	6535
2212	5365	2269	5524	2326	5645	2383	3321	2440	3436	2497	4334
2213	5615	2270	5641	2327	3312	2384	3432	2441	3545	2498	4441
2214	5633	2271	3256	2328	3424	2385	3541	2442	5420	2499	4545
2215	3252	2272	3415	2329	3533	2386	6542	2443	6422	2500	6541
2216	3364	2273	3525	2330	3653	2387	6413	2444	6531	2501	1433
2217	3521	2274	3644	2331	6362	2388	6523	2445	4326	2502	1464
2218	3636	2275	6353	2332	6514	2389	4322	2446	4433	2503	2135
2219	6345	2276	6463	2333	5413	2390	4425	2447	4541	2504	5246
2220	6454	2277	4264	2334	4421	2391	4533	2448	4652	2505	6214
2221	4255	2278	4412	2335	4525	2392	4644	2449	5333	2506	2331
2222	4363	2279	4521	2336	4636	2393	5325	2450	5441	2507	5226
2223	4512	2280	4632	2337	5321	2394	5433	2451	5545	2508	1225
2224	4624	2281	5312	2338	5625	2395	5541	2452	3326	2509	3142
2225	5262	2282	5421	2339	5263	2396	5654	2453	3441	2510	2325
2226	5412	2283	5525	2340	5646	2397	3322	2454	3546	2511	5125
2227	5521	2284	5642	2341	3313	2398	3433	2455	6563	2512	2526
2228	5634	2285	3262	2342	3425	2399	3542	2456	6423	2513	4134
2229	3253	2286	3421	2343	3534	2400	6543	2457	6532	2514	1434
2230	3412	2287	3526	2344	3654	2401	6414	2458	4331	2515	3122
2231	3522	2288	3645	2345	6363	2402	6524	2459	4434	2516	1264
2232	3641	2289	6354	2346	6515	2403	4323	2460	5442	2517	2632
2233	6346	2290	6464	2347	4314	2404	4426	2461	4653	2518	5154
2234	6455	2291	4265	2348	4422	2405	3314	2462	5334	2519	1333
2235	4256	2292	4413	2349	4526	2406	4645	2463	5442	2520	4151
2236	4364	2293	4522	2350	4641	2407	5326	2464	5546	2521	2356
2237	4513	2294	4633	2351	5322	2408	5434	2465	3332	2522	6233



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2523	3124	2580	1342	2637	6241	2694	6315	2751	1526	2808	1243
2524	1435	2581	4123	2638	1313	2695	2453	2752	2234	2809	2455
2525	1253	2582	2321	2639	2465	2696	1325	2753	2654	2810	1424
2526	1314	2583	2623	2640	2635	2697	3146	2754	1224	2811	2156
2527	5324	2584	1463	2641	5215	2698	2332	2755	6245	2812	2544
2528	2136	2585	6224	2642	2232	2699	2414	2756	1324	2813	4113
2529	4124	2586	2251	2643	4126	2700	5222	2757	2264	2814	1452
2530	2322	2587	5256	2644	3365	2701	1554	2758	2423	2815	2123
2531	6264	2588	2346	2645	2624	2702	2226	2759	1425	2816	2425
2532	2351	2589	3131	2646	2535	2703	2414	2760	1562	2817	4131
2533	2124	2590	2565	2647	1532	2704	1414	2761	2334	2818	2262
2534	1436	2591	2323	2648	2143	2705	2145	2762	2456	2819	1514
2535	2242	2592	1566	2649	5156	2706	2653	2763	1321	2820	2152
2536	6225	2593	3145	2650	1545	2707	2352	2764	2464	2821	4215
2537	2355	2594	2241	2651	1266	2708	4155	2765	5143	2822	2223
2538	4142	2595	2634	2652	2334	2709	1265	2766	1354	2823	5134
2539	1541	2596	2646	2653	6223	2710	1555	2767	6252	2824	2442
2540	6234	2597	4153	2654	2364	2711	1252	2768	2433	2825	1556
2541	3123	2598	2436	2655	4122	2712	1412	2769	1446	2826	3224
2542	1521	2599	6243	2656	1445	2713	2235	2770	1232	2827	2534
2543	3244	2600	1432	2657	5132	2714	5231	2771	2215	2828	1335
2544	5212	2601	1355	2658	3135	2715	2144	2772	6223	2829	2642
2545	1564	2602	2153	2659	2412	2716	2562	2773	1363	2830	2435
2546	3212	2603	2345	2660	1316	2717	3221	2774	2522	2831	1533
2547	2255	2604	2532	2661	3142	2718	1223	2775	2125	2832	3152
2548	4143	2605	1425	2662	6244	2719	2265	2776	2353	2833	2313
2549	6314	2606	2253	2663	2142	2720	2424	2777	6254	2834	5224
2550	2621	2607	5146	2664	5221	2721	5131	2778	1535	2835	2451
2551	2236	2608	3114	2665	2413	2722	2126	2779	1262	2836	1323
2552	5121	2609	1442	2666	2154	2723	1543	2780	3222	2837	2553
2553	3132	2610	1465	2667	3324	2724	1335	2781	1334	2838	2422
2554	1522	2611	3151	2668	2524	2725	3133	2782	3141	2839	2625
2555	1244	2612	2324	2669	2214	2726	2213	2783	2312	2840	2231
2556	4152	2613	2362	2670	6242	2727	1226	2784	2543	2841	2443
2557	6235	2614	4141	2671	1362	2728	1251	2785	5136	2842	2533
2558	1431	2615	1322	2672	6222	2729	2336	2786	6212	2843	2536
2559	3125	2616	3451	2673	2333	2730	4523	2787	1462	2844	1531
2560	2633	2617	6313	2674	2652	2731	5142	2788	1246	2845	2133
2561	1353	2618	5166	2675	2466	2732	3223	2789	2243	2846	2441
2562	4146	2619	2344	2676	1544	2733	1451	2790	6262	2847	2554
2563	6346	2620	1534	2677	6226	2734	1466	2791	5225	2848	1344
2564	1366	2621	1242	2678	1315	2735	3131	2792	2462	2849	2551
2565	2525	2622	3213	2679	3156	2736	2256	2793	4212	2850	6256
2566	4144	2623	2641	2680	1542	2737	1441	2794	2644	2851	1234
2567	1435	2624	5155	2681	5126	2738	2415	2795	1331	2852	3153
2568	1512	2625	1235	2682	3112	2739	0451	2796	6221	2853	5223
2569	2366	2626	2651	2683	2246	2740	4125	2797	2354	2854	2554
2570	5124	2627	1352	2684	1231	2741	4614	2798	2515	2855	1413
2571	2254	2628	2305	2685	2645	2742	2541	2799	2564	2856	2335
2572	4226	2629	6312	2686	1515	2743	6321	2800	2512	2857	4213
2573	1224	2630	2341	2687	1245	2744	4156	2801	1565	2858	2444
2574	2464	2631	4222	2688	4154	2745	1332	2802	3663	2859	4114
2575	1422	2632	1443	2689	2556	2746	4246	2803	6251	2860	1553
2576	2132	2633	3113	2690	1341	2747	2432	2804	1343	2861	2225
2577	2446	2634	1255	2691	5123	2748	2565	2805	2521	2862	6246
2578	2531	2635	5151	2692	2245	2749	3214	2806	5131	2863	4214
2579	5214	2636	2266	2693	2421	2750	1342	2807	2552	2864	2553



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2865	2535	2922	5232	2979	2655	3036	6646	3093	0152	3150	3516
2866	6263	2923	3325	2980	4664	3037	4014	3094	6112	3151	0454
2867	1532	2924	3664	2981	0465	3038	0335	3095	6626	3152	6146
2868	1245	2925	2233	2982	4202	3039	0	3096	1331	3153	7147
2869	4133	2926	1455	2983	1143	3040	5516	3097	4012	3154	7420
2870	2365	2927	5135	2984	3311	3041	0134	3098	1233	3155	2013
2871	5145	2928	1513	2985	6634	3042	0127	3099	0	3156	0143
2872	1426	2929	3215	2986	2121	3043	0	3100	4102	3157	4103
2873	2155	2930	1241	2987	2402	3044	0253	3101	4102	3158	6113
2874	6215	2931	1415	2988	6205	3045	0	3102	6356	3159	2301
2875	2314	2932	3121	2989	3023	3046	0146	3103	6135	3160	0
2876	1423	2933	5144	2990	0421	3047	1425	3104	2012	3161	0224
2877	1263	2934	1563	2991	3556	3048	0355	3105	0235	3162	0
2878	2124	2935	2141	2992	1212	3049	0131	3106	1130	3163	0405
2879	2452	2936	3155	2993	2665	3050	0131	3107	6157	3164	1455
2880	6231	2937	5152	2994	1226	3051	0	3108	0377	3165	6655
2881	2513	2938	2631	2995	5214	3052	0233	3109	6465	3166	7142
2882	2563	2939	1346	2996	2511	3053	3516	3110	0	3167	5401
2883	1233	2940	1551	2997	4662	3054	0423	3111	0122	3168	0547
2884	2434	2941	0346	2998	4556	3055	0	3112	5117	3169	2014
2885	2251	2942	2454	2999	0	3056	4015	3113	0145	3170	4216
2886	1523	2943	4311	3000	6636	3057	0154	3114	0	3171	0235
2887	2343	2944	2023	3001	0	3058	6630	3115	6411	3172	0
2888	6253	2945	1135	3002	0	3059	0125	3116	0	3173	5416
2889	2545	2946	3265	3003	0	3060	0414	3117	6143	3174	6117
2890	1365	2947	5113	3004	0	3061	4406	3118	0433	3175	1573
2891	2134	2948	2212	3005	2126	3062	0142	3119	0	3176	0
2892	2555	2949	4031	3006	0	3063	0	3120	0334	3177	2216
2893	5133	2950	1156	3007	0	3064	4123	3121	6316	3178	1151
2894	1525	2951	4663	3008	5126	3065	2316	3122	4441	3179	2410
2895	2542	2952	5466	3009	0	3066	0211	3123	0231	3180	7377
2896	1345	2953	6551	3010	0	3067	0324	3124	6115	3181	2620
2897	6255	2954	2236	3011	0	3068	7257	3125	6254	3182	7122
2898	5141	2955	2515	3012	0	3069	0262	3126	0	3183	0325
2899	2242	2956	2115	3013	0	3070	2401	3127	6340	3184	6430
2900	1236	2957	4121	3014	0	3071	0133	3128	0153	3185	6253
2901	1454	2958	2411	3015	0	3072	0156	3129	3426	3186	0433
2902	1312	2959	6265	3016	0	3073	0	3130	2251	3187	6240
2903	3115	2960	1231	3017	0	3074	3164	3131	2511	3188	1511
2904	1351	2961	6402	3018	0	3075	0	3132	6023	3189	0155
2905	5153	2962	0453	3019	0	3076	0255	3133	4355	3190	2416
2906	1421	2963	2662	3020	0	3077	0	3134	0123	3191	4220
2907	2146	2964	4411	3021	6316	3078	0124	3135	0	3192	6653
2908	4132	2965	5655	3022	0	3079	0	3136	3133	3193	4104
2909	2463	2966	2155	3023	0	3080	0221	3137	0	3194	0132
2910	1532	2967	0	3024	0	3081	0	3138	0442	3195	5301
2911	1254	2968	1221	3025	0	3082	3317	3139	1217	3196	2014
2912	3125	2969	3555	3026	0	3083	6132	3140	4516	3197	5566
2913	6232	2970	5115	3027	0	3084	5306	3141	0135	3198	1324
2914	4231	2971	6311	3028	0	3085	0	3142	5314	3199	6133
2915	2326	2972	4266	3029	0	3086	6652	3143	5665	3200	1316
2916	5122	2973	0	3030	1401	3087	6126	3144	0		
2917	3154	2974	0262	3031	4042	3088	1511	3145	5144		
2918	1536	2975	1154	3032	1131	3089	6214	3146	0223		
2919	4135	2976	3411	3033	0	3090	0	3147	6640		
2920	1555	2977	6366	3034	0	3091	3013	3148	0		
2921	2622	2978	4112	3035	3012	3092	2116	3149	3015		

TRIL

Mail Lists, Marketing, And Making Money

A SURVEY STATES THAT 72 PERCENT OF NEW HOMEOWNERS WILL SPEND BETWEEN \$10,000 AND \$25,000 THE FIRST TWELVE MONTHS, 10 PERCENT TO IMPROVE SECURITY.

by
Kathryn Haselden

As a marketing device, new homeowner mailing lists can increase your sales and profitability. A survey completed by new homeowners revealed that 72 percent will spend between \$10,000 and \$25,000 the first twelve months. Furthermore, 64 percent will finance these purchases by their savings and 35 percent by their credit cards. In the first three months 19 percent will purchase windows and doors. Also, 10 percent will improve their security system. Additionally, 22 percent desire information and special offers from the locksmith industry.

It is imperative to have a current and up to date new homeowner mailing list, so you can be ahead of your competitor. The mediums available containing information on the new homeowners include peel and stick labels (pressure sensitive), cheshire labels, floppy diskette (various sizes and formats), magnetic tape, fax and modem, and can be received weekly, biweekly and monthly.

They help you reach the new homeowner with your special and individual offer before anyone else, assuming you get the mailing list in the most expeditious manner.

It is critical to realize that your mail piece has to reach out and touch that new homeowner. It is important to be number one, but it is also important to



George Castro, owner of Fairfax Lock & Key in Los Angeles, California, has found direct mail through the use of new homeowner mail lists help increase his business.



have something to say when you get there. For example, you might take the 'neighborly' approach and send them a card, flyer, or letter welcoming them to the neighborhood. Post cards and promotional items are also very effective.

You need to get their attention and arouse their interest first. There are a number of ways of doing this. You might take an envelope and put something in it. Even if it is just a penny. When the new homeowner receives the envelope and feels something inside, human curiosity generally gets the better of them and they open it. You could put a card inside the envelope with the penny saying 'We can help you make heads or tails out of your home and business lock security needs.'

Send them a photograph of a damaged inferior lock in your mailer and say 'Would you put your trust in this lock for the safety of your family or business?' 'Then don't! We can protect you through our expertise in lock and safe needs for a more secure you.'

You may offer the new homeowner a free evaluation of their locks. Then upon arriving at their home, present them with a refrigerator magnet in the shape of a lock with your name, address and telephone number on it. Place it on their refrigerator door yourself. Thus keeping your name directly in front of them at all times. In sight, in mind. The magnet would act as a reference or referral to their family and friends.

You may want to offer a free House Warming Gift, on your mail piece. Such as, a plant or a welcome mat and tell them to call you to receive this free house warming gift. It is a way to unlock the door for you and that, of course, is exactly what you want.

Everyone seems to offer discounts such as 10 percent off. However, instead of giving a percentage off, give a dollar amount off. A new homeowner survey revealed that 23 percent desire a percentage off, while 49 percent want a dollar amount off.

If you are going to take the time to do a mail piece do it right and make it work for you. Try something different. Offer them free lottery tickets if they

call you for a consultation. Send them a tiny salt and pepper shaker with a note that says 'Let us sprinkle peace of mind in your home and office.'

Coupons are still often effective as well.

Select your sales and marketing strategy in a method that is not only going to increase your sales and financial gain, but in a way that is going to have such an impression on the new homeowner that it makes word of mouth advertising work for you. This can mean on-going and consistent referrals if done in a creative and sincere manner.

It is extremely important to have a current and up to date mailing list. It is also important to receive this mailing list and utilize it promptly. If you receive a list of existing homeowners that is more than several years old, the chances are that many of those homeowners will have moved, in today's economy. You would not have only wasted your time, but the money that you put into the mailer itself, as well as postage.

If you can get a new homeowner mailing list, rather than an existing list of homeowners, this will give you the upper hand on your competitor. Existing homeowners have been approached time and time again. If you get a new homeowner list, one to two weeks old, it is very likely that you will be the first in your field to have approached the new homeowner.

It is imperative to be prepared when you receive your mailing list, so that you can put it to immediate use and 'Get there First.' You should already have your mail piece ready to go. This way you can mail it out as soon as you receive the names and addresses. Further, it is often good to take a very personal approach by following up on your mail piece with a telephone call. If the direct mail company is a good one, they should be able to provide you with approximately 20 percent to 40 percent of the new homeowners telephone numbers, as they are available. Make your telephone call brief, sincere and friendly. Otherwise people might consider you a nuisance and even rude.

It is easy to tell when you receive a

'Bad' mailing list by all the returns you will get. Make sure in advance that you ask the company you are buying your list from how current the list will be and when you will receive it. Be sure the company is sound and has been in business for a number of years. Ask for testimonials and who some of their customers are.

Make sure the company sells to businesses, both large and small. This will not only tell you if they are the right company for you, but also if their prices are fair and competitive. In most cases, you pay for what you get. Shop around and compare prices with product.

Also, it is important to realize that your direct mail program is an investment. Thus, you should try it for a reasonable period of time. Certainly not less than three months. If the program is not working, you may want to change your mail piece. Usually it is a good marketing strategy to give your investment a thorough chance. You may want to sign with the company for a year and get a lower monthly premium. Any good marketing strategy and direct mail program takes time to perfect or meet your standards and expectations.

Don't forget the prospective buyer after you have sold them. It is good business to make sure your customer remains your customer and refers you more clientele.

Keep track of how your direct mail project is going. In the concept of direct mailing the key is, not everyone watches television or listens to the radio or buys a newspaper. However, everyone receives mail.

The author is Kathryn Haselden Public Relations, 818-992-3814, and represents Homeowners Marketing Services, Inc., 800-232-2134. 

"Business is tough these days. If a man does something wrong he gets fined; if he does something right he gets taxed."

BITS & PIECES

Informative Tidbits for the Security Industry

In case you've missed out, there's a new car opening method for late model GM's with the remote lock/unlock system. It's called the Tesla Technique and it utilizes walkie-talkies, cellular phones, two way radios, CB's and just about any other radio transmission device.



by
Tom Seroogy

To open a vehicle, simply dial in the right frequency and transmit. Voila, the car doors and deck lid magically open.

One such case was forwarded to me by Steve Graham of Mr. Lock from Euless, Texas. Apparently, a customer who carries a Motorola two-way handset is able to unlock about 90 percent of these cars after dialing a sequence of numbers. Steve is going to investigate this a little more for us to confirm the exact frequency and sequence the customer uses to accomplish this task.

In the mean time, Tom Mazzone has contacted GM Tech Services, who have confirmed that some problems due to RFI have been noted on their remote system packages. Inadvertent and unexpected locking/unlocking of the doors and deck lid have been reported, with higher occurrences around airports.

It should be noted, too, that RFI problems have always existed with wireless and remote systems. I'm sure all of us have a small collection of tales on the strange openings of garage doors, or uncontrollable TV sets.

As for the locksmith, you're now armed for defending yourself from customers who want to lay blame for the intermittent problem on your latest car opening.

Security Lock Distributors can now

be reached through the Internet. Their E-mail address is: SECLOCK@IX.NETCOM.COM

By allowing computer-to-computer communication, communication between Security Lock Distributors and the locksmith can be done all day, every day. Looks like a good move to me!

In May of 1994, *The National Locksmith* magazine was the first to bring you a peak view of the new 1995 Blazer and Suburban GM 10-Cut column.

Since then, Tom Mazzone, technical writer, has had an opportunity to service these vehicles and leaves us with this report on service procedure highlights.

1. For the following reasons, it is absolutely necessary to first disconnect the battery before servicing.

- If following procedures as set by STRATTEC (removing the entire lock housing and plug), power disconnection is necessary for removing the airbag.

- If using an alternate method that removes the plug only, the plug retainer can only be depressed when the plug is in the START position and not the ON position as previously announced.

2. Two plug removal methods are currently feasible. The first is through the use of the Aable Locksmith GM Nine Wafer Ignition Pick. For information on this pick contact Aable Locksmiths, 91-10 Liberty Ave., Ozone Park, NY 11417, (718) 847-1377

Second, because the sidebar is made of hardened steel, it is not feasible to drill the sidebar using a high speed drill bit. Instead, remove the facecap, the hardened faceplate disk and then the material directly in front of the sidebar. Then use a pick or hemostat to remove the sidebar out

the face of the plug.

A third method using tryout keys developed by Aero lock is in the works but hasn't been tested by us as of yet.

3. When using the above methods to remove the plug only, after picking or removing the sidebar, it is critical that a keyblank or a pick be inserted into the plug before turning. This moves the key buzzer switch out of the plug's shearline. If the plug is turned without first moving the switch out of the way, it will be sheared during plug turning, destroying it. A new switch, part of a larger wiring loom (Ignition Key Alarm Switch, part #26036311), lists for \$163. Ouch!!!

PASS/VATS keys are now available from All-Lock. Suggested locksmith cost is \$8.90 each, although better deals can be obtained through distributor and trade show specials.

The contact points and resistor for this key are held into the key by a plastic tab or leg that extends down the blade from the plastic head. Part numbers for the 15 different values range from VA9801 to VA9815. The last two numbers represent the VATS value.

For more information or to make a purchase, contact an All-Lock distributor.

We've had quite a response to the Master padlock codes that have been run the last few months. Following are several more Master codes sent in from Ed Malone of Ed's Lock & Key in California, Missouri. Thanks Ed!

Code	Bitting	Key Blank
0290	6513	1K
0334	1502	1K
1551	2555	1K
3055	6620	1K
3082	3316	1K
3124	6015	1K
3955	5535	1K

A561	5651	1K
X2902	2656	1K1
10M085	10441	81KM
12M099	15411	81KM
38M69	11451	81KM
10L209	01424	27K
10L440	03634	27K
10L730	76261	27K
10T165	46554	17K
19T451	02320	17K
20N050	64310	15K
20N068	62310	15K
20N201	42012	15K
20N353	55310	15K
20N426	60210	15K
20N520	41012	15K
20N984	43410	15K
22N183	40015	15K
22N338	44225	15K
10G016 (ProSeries)	45035	6000K
10G730 (ProSeries)	62361	6000K

And the winner is...

According to a recent Associated Press news story, during 1994 the 1984 Oldsmobile Cutlass Supreme was the vehicle of choice for auto thieves. This makes it the third consecutive year that the 1984 Supreme has held this spot. As manufacturers go, General Motors holds top honors, manufacturing 56 of the 100 most stolen vehicles.

The number two top stolen vehicle was the 1993 Jeep Grand Cherokee 4x4. **TLN**

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BEGINNER'S CORNER

Continued from page 29

modem. This hooks up your computer to the telephone line, so that you can send messages called E-mail. With the modem, you can connect on to one of the On-Line programs, such as America Online or CompuServe. These programs also allow you to use the Internet.

There are hundreds of locksmiths who are on America Online, so you can communicate with locksmiths all over the country. Now *The National Locksmith* magazine is on America Online and you are able to send E-mail by typing natlock@aol.com. Cost for AOL is \$9.95 per month with a charge of \$2.95 an hour for time over 5 hours. When you first sign on you get 10 free hours. For information on connecting to AOL, call 800-827-6364. I am also on America Online and you can reach me by typing Lean Gene. I would welcome anyone who would like to chat or who would like to see articles of particular interest in the Beginner's Corner.

Anyone who is considering purchasing a computer should shop around for price and should ask questions about what programs the computer has. Ask friends who have computers for advice and do some reading on what computers offer.

Write to the author via E-mail at leangene@aol.com. TLN

THE LIGHTER SIDE

Continued from page 62

when? A far-fetched notion? Maybe not, in light of the will's provision for the unwed mothers' home and the orphanage. That could really complicate matters, especially if that imagined child now had heirs of his or her own.

I brought my mind back to reality. Even without the fantasy, there were potential complications. The nephew might contest the amount left to him as having been eroded by inflation. At the least, he might argue that the intent of his uncle was to provide him with the proportion of the estate indicated by the dollar-amount stated in the will, as compared to the total estate at that time, thirty years ago. The same percentage, today, would represent a considerably higher dollar figure.

"What a mess," I mused. "I'll bet that attorney wishes you hadn't opened up such a can of worms, especially if it turns out there's a lengthy lawsuit over the will."

"Are you kidding?" Don replied. "You should have seen the expression on his face. He reminded me of an undertaker trying to look sad at a \$10,000 funeral. The main problem right now is sorting through all the papers and miscellaneous junk that filled the safe."

"Well, everyone should at least be thankful the man didn't have a warped sense of humor, like a man I heard about recently."

"What do you mean?"

"As I heard it, a man who wanted to take an extended vacation abroad asked his banker for a loan to make the trip.

When he was turned down, he borrowed the money elsewhere. Then he bought a five-pound fish, had it wrapped, locked it in a safe deposit box at his bank, and left on a six-months tour of Europe. **TLN**

TECHNITIPS

Continued from page 95

a tap and pulled out on the bolt.

That freed the bind on the key which I removed unharmed from the lock, and checked the operation of the lock with the proper key.

Russ McGurrin
Ohio

A strong gust of wind ripped an aluminum store front door with an offset hinge away from the top, or cross stile, of the door. The force was strong enough to tear the hinge mounting screws completely out of

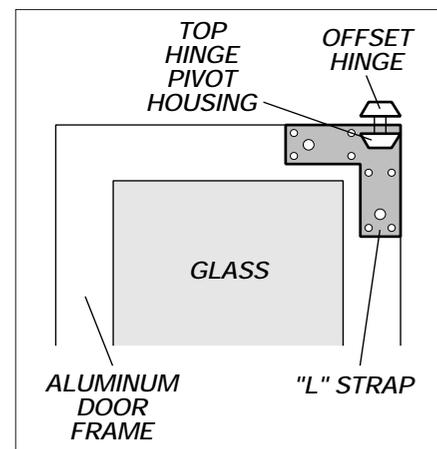


Illustration 10.

the cross stile, leaving large, malformed holes where the screws had been.

I repaired the damage by buying an 8"x 8" L-bracket at the hardware store and mounting it at the top right corner of the door as shown in illustration ten.

In order to bring the pivot housing into alignment, I had to remove enough material from the back side of the housing to compensate for the thickness of the L-bracket.

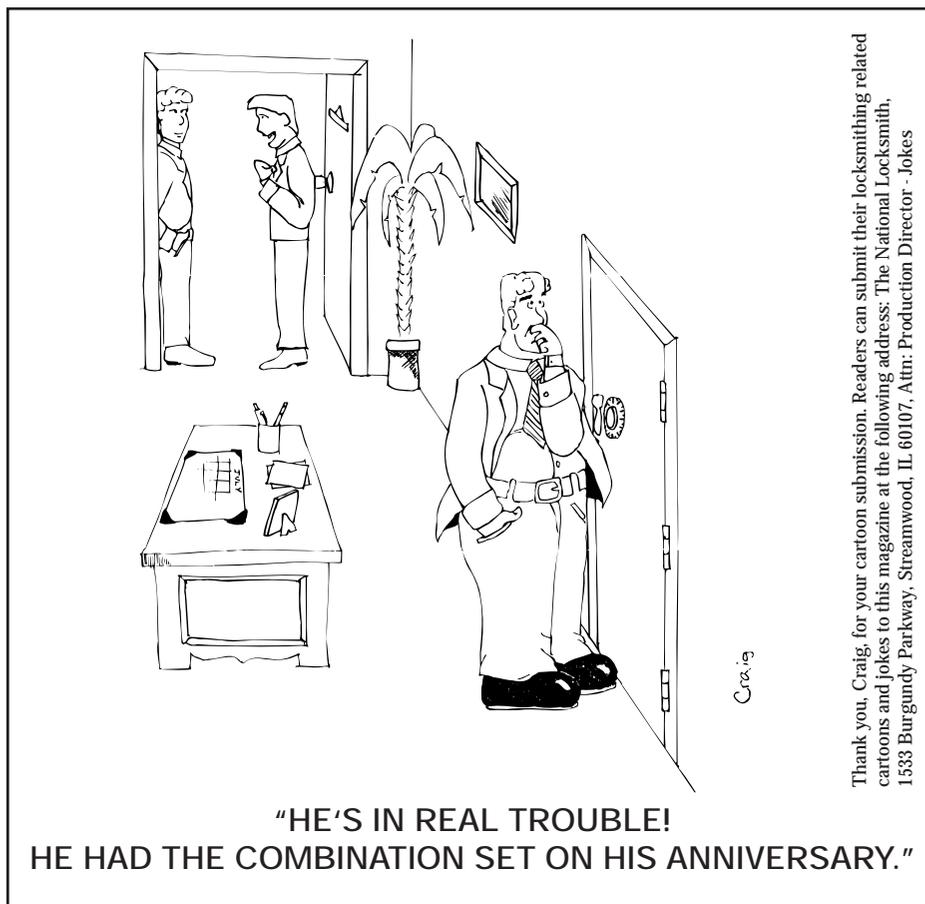
Then, after spray painting the bracket to match the finish on the door and drilling the necessary holes in the L-bracket, I attached the pivot housing and saved my customer the cost of a new door.

Steve Briarton
California



MOVING?

Please notify us six weeks prior to your move. Send your name, old address and new address to:
TNL, Address Change Dept.,
1533 Burgundy Pkwy,
Streamwood, IL 60107.



Thank you, Craig, for your cartoon submission. Readers can submit their locksmithing related cartoons and jokes to this magazine at the following address: The National Locksmith, 1533 Burgundy Parkway, Streamwood, IL 60107, Attn: Production Director - Jokes

Lockmasters has a 44 year history of training security professionals.

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TEST DRIVE



Taking Industry Products for a Spin Around the Block

MAJOR MFG.'S HIT-45

PRODUCT: The HIT-45 template by Major Manufacturing. Available through distributors or for more information contact Major Manufacturing, Inc. at P.O. Box 788 Atwood, California 92601. Phone 714-772-5202 or fax 714-772-2302.

PRODUCT DESCRIPTION:

The HIT-45 is a modular template designed for doing mortise lock preparation on wooden and aluminum frame doors. The modular design creates a versatility unknown by other template products.

The backbone of the device is the HIT-45 clamp. It's to this part that all adapters and templates are connected. Price for this piece is \$197.50.

As of this test the following templates are available: HIT-45AR1, \$29.50, for Adams Rite 1"x6-7/8" faceplate; HIT-45AR2, \$63.25, for 1-1/8" Adams Rite Cylinder and Indicator holes; HIT-45AR3, \$65.50,



The HIT-45 group of templates by Major Manufacturing, Inc.

DESCRIPTION: Major Mfg.'s HIT-45 series templates.
COMMENTS: Fast and accurate on both wood and aluminum doors.
TEST DRIVE RESULTS: The time saved, the quality of the tools, and the quality of the work performed make these tools an asset for any locksmith.

for Adams Rite 31/32" and 1-1/2" Cylinder and Position indicator holes; HIT-45AR4, \$65.50, for Adams Rite 31/32" and 1-1/8" Cylinder and Handle holes; HIT-45ML1, \$55.50, Mortise Lock Positioning fixture; And, HIT-45SL1, \$124.75, for Schlage L Series mortise preparation. A Titanium coated, 1/4" router bit is also available for \$16.25, part HIT-45RB1

Finished in Regal Turquoise (same color as the '58 Corvette), the HIT-45 is as attractive as it is versatile.

FRIENDLINESS: The HIT-45 is extremely easy to use. Choosing the correct template for the application, attach the template to the clamp using the screws provided. Then align the fixture on the door and use the two large thumb screws to clamp the tool to the door.

Because the clamp is self-centering, true centering is accomplished without spending the time to measure and align for index lines.

FEATURES: There are several excellent features that are intrinsic to the HIT-45 group of templates. They are rugged, light and compact.

The self-centering feature maximizes installation speed and quality.

To preserve the integrity and longevity of the template drill guide holes, each hole is lined with a hardened steel insert. This is important as the drill guides keep the drill square with the surface being prepped.

COMMENTS AND SUGGESTIONS: For a fresh install or retrofit work, the HIT-45 saved time and delivered professional, factory appearing door preparations.

On an aluminum door, the fast, self-centering clamp drastically reduced the amount of time typically required for centering the template.

In fact, total job time was no more than 15 minutes.

On wood door mortise retrofitting, the HIT-45ML1 Mortise Lock Positioning Fixture saved time by making fast and accurate alignments with existing mortise pockets.

CONCLUSION: Two factors determine a tool's merit or worth: The time saved using the tool and the quality of the work performed by the tool. In both cases Major's HIT-45 excels. **RL**