Lab "S" Pins

A New Twist In Security?

Pick resistance for standard pin tumbler cylinders

by G. L. Finch
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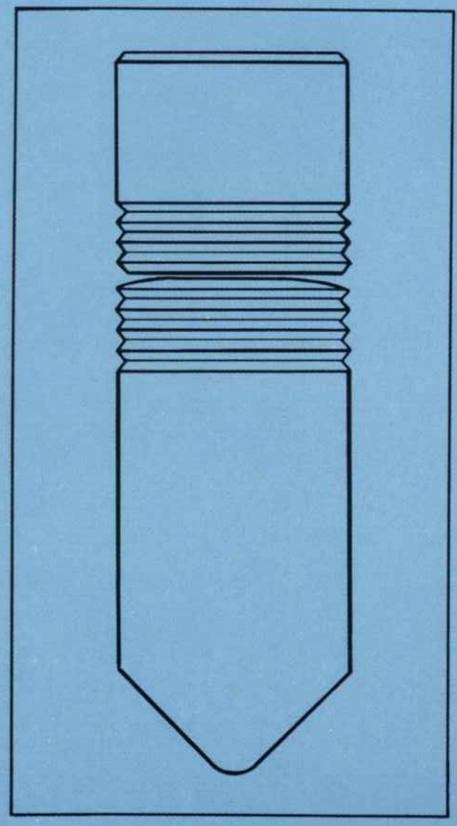
Recently, I had the pleasure of testing the effectiveness of the new LAB "S" (Security) pins. These are bottom and top (driver) pins that have serrations (grooves) added as shown in Figure 1. I tested these several different ways and did a little improvising of my own to provide even greater pick resistance. The results were remarkable.

I tested the LAB "S" pins on cylinders not necessarily known for their pick resistance. All of these use .115 diameter pins.



Lab "S" Pins

In the first test I tried, I used them in the same manner that mushroom and spool pins are used; that is, using only two or three to a cylinder. In a 5-pin cylinder I placed top and bottom LAB "S" pins in two chambers only and in a 6-pin cylinder I used three top and bottom LAB "S" pins. The remaining pins were standard pins. I also used spool pins in identical cylinders in the same manner for comparison purposes. The results were:

1. The cylinders with the spool and mushroom pins offered only nominal resistance to picking. Their greatest weakness was that once the three or four standard pins in the cylinder had been picked, the plug rotated six to eight degrees, thus identifying the cylinder as one that contained mushroom or spool pins and the position of these pins.

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3. The cylinder equipped with the two or three LAB "S" pins offered many times the resistance to picking than the spool and mushroom pins.

The second test I tried was loading top and bottom LAB "S" pins into all chambers of both a 5- and 6-pin cylinder. It is not possible to do this with mushroom or spool pins because the keyway of the plug will tend to rotate off the center line making it difficult to insert the key.

"The cylinders with all top and bottom "S" pins offered tremendous pick resistance." I am willing to state that the average individual with only average picking skill would find these cylinders next to impossible to pick in any reasonable amount of time.

My third test was to borrow an idea from an old friend and combine it with the LAB "S" pins. I took a standard 6-32 TAP and tapped each chamber in the plug with only three turns. Into the cylinders I put LAB "S" top & bottom pins in positions (2 thru 5 or 6). I put a standard bottom and top pin in the first chamber in the plug and in the remaining five or six chambers I inserted all LAB "S" pins.

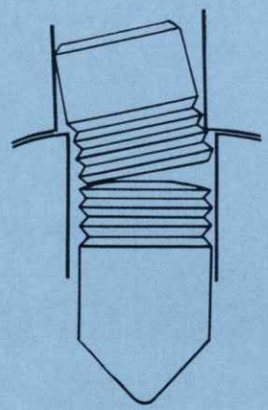
This one proved to be a real horse race and neither I nor my friends have picked it yet. This is not to say it can't be picked, but it would take an unreasonable amount of time to do so which is a luxury that neither a locksmith nor a thief would have.

I put a standard top and bottom pin in the first positions so as to disguise the fact that LAB "S" pins were present. If an "S" pin is in the first position, the serrations on the top of the bottom pin can be seen. Depending on your point of view, it might be wise for these serrations to be visible.

The cylinder equipped with the two or three LAB "S" pins offered many times the resistance to picking as did the spool and mushroom pins.

The tremendous pick-resistant feature of the LAB "S" pin is in the serrations (grooves) cut into the pins. When a turning pressure or torque is put on the plug during a picking attempt the grooves will hang up on the edges of the pin chambers in the plug and shells.

When using the key, the pins and cylinders work very smoothly due to LAB combining its copyrighted .003 crown pin design with the new "S" pin. Remember, it is the row of top pins that is down across the shear line blocking the rotation of the plug. During picking attempts, as a top pin is moved and bound up, you are given a false impression of having reached a shear line. The bottom pin is no longer under spring pressure and will move up and down freely. In a standard cylinder this condition exists when the top pin has been trapped in the shell and that chamber neutralized.



WITH TURNING PRESSURE APPLIED - PLUG CHAMBERS NOT TAPPED.

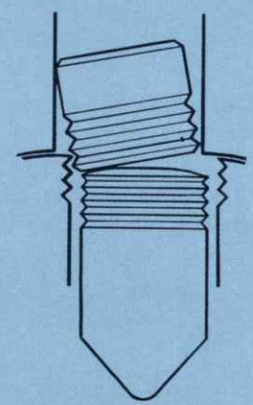
By putting grooves (threads actually) in the plug with a 6-32 tap (#35) you can create a more positive locking action between the pins and grooves in the plug. The grooves will actually mesh together when a turning torque is applied preventing vertical movement.

When tapping the plug, it is only necessary to take three full turns with the tap as previously recommended. **Do not tap more.** The pin chambers are just the proper size to accept a 6-32 tap. I haven't tried it as yet, but with cylinders that use spring covers on the top, such as Kwikset, Weslock and others, it will be possible to tap the chambers in the shell. You will need to tap them the entire length of the chamber. This action should make impressioning of the cylinder all but impossible. It will be interesting to find out the results. It absolutely will add to the pick resistance.

My recommendations for usage of these pins are as follows:

1. Where the highest degree of pick resistance is desired — tap all pin chambers in the plug and, if possible, the shell. Use LAB "S" top and bottom pins throughout.

2. A very high degree of security can be obtained by tapping the chambers in three positions in a 6-pin cylinder and using both top and bottom LAB "S" pins in these chambers and standard pins in the remaining chambers. In a 6-pin cylinder, use the LAB "S" pins in the second, forth and fifth positions for the greatest effectiveness. In the remaining chambers master pins can be used to create small master key systems. Master pinning three chambers (1 MP per chamber) will result in 64 theoretical changes in a two-step, 10 increment system and 216 changes in a single-step, seven increment system.



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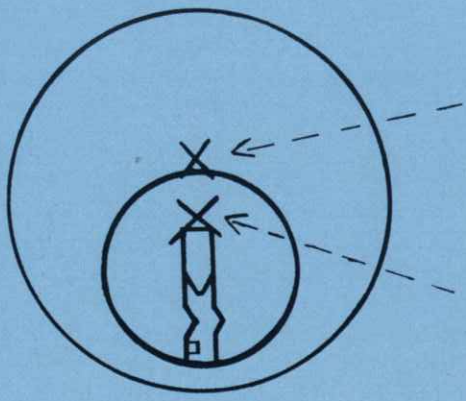

CYLINDERS ARE DRILLED HERE TO DESTROY TOP PINS AND ALLOW SPRINGS TO DROP ACROSS SHEAR LINE. A FLAT BLADED SCREWDRIVER WILL NOW ROTATE THE PLUG —

OR

THEY ARE DRILLED HERE TO OBTAIN THE SAME RESULTS. A HARDENED STEEL TOP AND BOTTOM PIN IN THE FIRST CHAMBER WOULD NEGATE BOTH THESE DRILL PATTERNS.

Cylinder plugs that have been filed or have had their pin chambers reamed should not be used with the "S" pins. There is no way to restore or enhance the security that was destroyed when the cylinders were reamed or filed.

One word of caution: I haven't yet been able to determine how well the soft die-cast plugs will hold up to the use of LAB "S" pins or to tapping. In this same vein, do not use cylinder plugs that have been "butchered."

This one proved to be a real horse race and neither I nor my friends have picked it yet.

Cylinders pinned as described in the first instance would provide the pick resistance required for locking devices used on perimeter or remote areas.

Another great idea I will recommend to LAB is that they consider manufacturing a kit that contains hardened steel top and bottom pins. One each top and bottom hardened steel pins could be placed in the first chamber of a cylinder with LAB "S" pins. This would defeat the common method of drilling open a cylinder and provide the common cylinders with the most outstanding features of the more expensive high security cylinders.