

## NorthAmerican Technical & Forensic Services

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The August issue of “Wired” magazine contains an article authored by Brad Stone titled “Pinch My Ride”. The article deals with auto theft, particularly electronic anti-theft systems (transponders) and we have received a considerable number of inquiries regarding the article.

Although there has been information and articles distributed or published over the past few years regarding transponder systems (the computer students from Johns Hopkins University with the laptop computer program to compromise the Texas Instruments transponder being the most noteworthy) most of this information neglects the physical security of the vehicle, including the ignition lock, column and/or gear selector lock and protected starter (ignition) switch.

There has been so much emphasis placed on the electronic transponder systems that the physical security is often minimalized or overlooked. In the Johns Hopkins University exercise, as well as Mr. Stone’s “Wired” article, the properly cut mechanical ignition key was used to unlock the steering column/gear selector and operate the starter (ignition) switch to energize the vehicle. If no key was available, the ignition lock or column components would have to be physically defeated. The scan tools (an electronic transponder re-programming device) provides the user with on-screen prompts to complete re-programming (a new, vehicle specific transponder key must also be present). One of the first prompts is to energize the vehicle since you can not program a cold vehicle. To energize the vehicle without the mechanical ignition key requires the steering column to be defeated first. And, you can not physically defeat the steering column without leaving damage to the components or detectible marks/scars to the ignition lock. The electronic protection (transponder system) and the physical security are two (2) entirely separate systems, two (2) entirely separate barriers. One has nothing to do with the other and both must be separately defeated or compromised.

So, if the transponder system is compromised, by-passed or re-programmed, you would only have succeeded in defeating one-half of the vehicle protection. And, if you have ever lost your keys, try starting your car (rotating the ignition lock) without them. Brad Stone stated in his article that one could use a secret “cheat” code (actually called an emergency start procedure) to override the transponder system and is designed for people who lose their keys. He goes on to explain a series of presses and pulls of the emergency brake and that a thief could use a “jiggle” key or a locksmith generated key to rotate the ignition lock. A “jiggle”

key is a key that is forcefully manipulated in the lock. “Jiggle” keys could be used in a well worn lock, but are generally ineffective on a newer lock. A locksmith could “impression” a key, which is also forcefully and repeatedly manipulated in the lock after repeated hand filing of the key cuts. Or, a new key could be cut from code (if a special key code cutting machine, the proper key blank and the manufacturer key codes are all available and present at the site). Then, inserting the fresh cut sharp edged key into the lock and rotating. A thief could also simply physically defeat the column by force, which could only take seconds. All of the described procedures would leave various degrees of damage from severe column damage and missing/removed components to marks, scars or imprints on the ignition lock components. Additionally, each procedure would take varying amounts of time, from minutes to an hour or longer depending upon equipment, parts, skill level of those involved and, of course, the make and model of the vehicle. It should be noted that many vehicles use the emergency start procedure, and many do not. Additionally, many vehicles utilize different types of locks such as high security sidecut key and lock package, split wafer locks, high security Tibbe locks and these locks would be immune to “jiggle” type keys. In fact, Honda Civics have been produced with high security side cut keys since 2003. It should be noted that most of these involved methods and procedures would be on the professional level, with a professional auto thief defined as one who steals cars for profit.

The early Ford transponder system (PATS) could be by-passed through the engine compartment fuse/relay box (power distribution center) by removing relays (not fuses) and using wires to jump the circuits. The procedure can take up to 45 minutes and then you must still physically compromise the steering column to shift and steer the vehicle. Simply “pulling” a fuse is not sufficient.

The study and examination of stolen motor vehicles has been around for decades. Some current experts are pioneers in this field and have been defining vehicle examination procedures, methods and evidence evaluation since the mid-seventies. Over the years some vehicle ignition locks and steering column security have changed in configurations which resulted in improvements, but the principles and basic concepts remain the same, an ignition lock is still an ignition lock and the steering column is still the steering column. As an example, in 1995 BMW began to install transponder anti-theft systems in their vehicles. The same 1994 BMW had the identical ignition lock and column assembly, but no transponder. The ignition lock and column examination on a 1994 BMW would be exactly the same as on the 1995 model, be it burned or unburned. No difference. The only change would be the transponder components installed on the lock housing (not in it) and this electronic security used as additional protection. Point being that non-transponder equipped vehicles have had the ignition locks and columns examined

and evaluated for decades prior to the advent of the transponder.

Competent experts in this field have been aware of the transponder re-programming equipment for years and disseminate this information during training seminars and meetings. Entire books have been written on auto theft, ignition locks and anti-theft systems. There are frequent training seminars. This information is not a secret.

Brad Stones' article contains some valid points and I would complement him for even mentioning the ignition lock and column security. I have discussed the auto theft issues with Mr. Stone on two (2) occasions, so I know he did research on the subject. Unfortunately, you can not begin to properly address this subject in a 2 ½ page magazine article or even a two and one half (2 ½ ) page memo. The overwhelming majority of vehicle examiners in this field of auto theft are highly trained and qualified with extensive experience, but, as in any field, beware of self-proclaimed experts whose proficiency for self-promotion far exceeds their technical knowledge and skill.

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