

Colt's SMART GUN

Prototype II Program

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The Smart Gun Prototype II Program is a one-year program that started in Fiscal Year 1998 with funding from NIJ. This program will result in the development of a personalized handgun that will meet the requirements of the law enforcement community. The final product will be a handgun that cannot be used by an unauthorized user.

The base technology for recognition and authorization of this handgun is radio frequency. When energized the gun emits a radio signal. A small transponder worn by the person authorized to use the gun receives this signal and returns a coded radio signal. When the gun hears that signal, a blocking pin is removed from the trigger mechanism, enabling the gun to fire normally.

Background

FBI data reveals that an average of 16% of the officers killed in the line of duty are killed by an adversary armed with a service firearm, either the officer's own or another officer's". In addition, there are currently 10,000 civilian firearms related injuries and deaths per year due to accidental discharge or unauthorized use of a firearm.

The need and applicability for this technology has been aptly described in a research document funded by the National Institute of Justice and issued by Sandia National Laboratories, Albuquerque, New Mexico "Smart Gun Technology Project Final Report". Sandia identified the requirements for smart firearm technology. They then investigated, evaluated, prioritized, and demonstrated the most promising available technologies.

Using an existing Law Enforcement Pistol (LEP) as a baseline, in 1996, Colt produced a first generation Radio Frequency Controlled (RF) weapon. The current grant for Prototype II is to bring this technology to a production status.

Colt's First Prototype demonstrated that the technology can operate, that all the necessary electronic and mechanical components can be made to fit inside a full size pistol, and that authorization can be made well within the time required to draw and aim a firearm. Colt's is designing and building Prototype II in order to develop more advanced designs suitable for the law enforcement environment. Upon completion of this product, Colt's will develop the commercial version of this gun.

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Technical Information Sheet

After several years of research and design efforts on the part of Colt's Manufacturing, the first viable "Smart Gun" prototype was created. Colt's Manufacturing was awarded a grant from the National Institute of Justice (NIJ) to help design and build the next generation Smart Gun suitable for Law Enforcement.

Colt's Manufacturing, as prime contractor, is managing the design and integration of control circuits designed by an electronics sub-contractor.

Operation will be "seamless"; handgun automatically enabled when within proximity of a Radio Frequency key (transponder) worn by the authorized user. The antenna will be directionally loaded to receive transponder signals only from behind the handgun. The reduced transponder-enabling zone provides additional protection in close quarter take-away situations.

Design effort is being steered by the Colt / NIJ Law Enforcement Council.

Parameters of the design have followed will continue to follow the suggestions of a Colt/NIJ Law Enforcement Council and the key areas identified in the Sandia National Laboratories (SNL) Report.

Upon completion of Prototype II, key Law Enforcement agencies will conduct field testing.

Additional features planned for the Smart Gun prototypes:

Smart Gun will look like any other handgun (not be recognizable as a "Smart Gun").

It will have an enabling range of approximately 8 inches from a transponder worn by the user.

Allow for multiple users.

An indicator, obvious only to the user, displaying status (enabled/disabled).

A design failsafe; if the electronics should fail, the firearm will be "armed."

Center for Gun Policy and Research

Personalized Guns

A personalized handgun is one that, by design, can only be fired when operated by an authorized user. Changing the design of handguns so that they are personalized can reduce the likelihood of certain gun-related deaths and injuries. Personalized handguns would be inoperable by the curious young child, the despondent teenager, and the criminal who steals the gun or disarms a law enforcement officer.

The Need: *Firearm-related injury is a major public health problem.*

Gun deaths in the United States number approximately 36,000 each year.¹

Handguns are the weapon of choice for people purchasing a gun for home defense, for the suicide victim, and for the criminal.²

Nearly one in every four households in the U.S. contains a handgun.³ Very young children find handguns in the home and are able to fire them, shooting themselves and others.

Children and teenagers also use guns found in the home to commit suicide. Among young people 10 to 19 years old, there are more than 1,400 suicides with guns each year.⁴ Suicide has become a leading cause of death among teenagers. The increase is due largely to gun-related suicides.⁵

It has been estimated that more than one half million guns are stolen from homes each year.⁶ Many of those guns are then illegally sold on the street.

From 1979 to 1992, an average of 13 police officers were killed each year in the line of duty with their own or a fellow officer's firearm.⁷

The Technology: *Present technology permits the manufacture of personalized handguns.*

Different technologies exist to personalize guns. Many patents for personalized guns have been awarded in the past few decades. Under contract with the National Institute of Justice, Sandia National Laboratories studied the feasibility of personalized handguns for use by law enforcement officers and developed several demonstration models.⁸ Colt's Manufacturing Company Inc. has also developed prototypes of personalized handguns.

One method of personalization involves the use of a tiny transponder, embedded in a ring or worn on clothing, that emits a radio frequency. The transponder signals a unique code to the gun, and the personalized gun will only fire if it detects the presence of its

transponder. Other high-technology personalization methods include fingerprint recognition and bar code scanning. Low-technology methods include built-in combination locks.⁹

Policy Options: *Policies encouraging safe gun design can prevent firearm injuries.*

Legislation and Regulation

States and some localities can pass laws requiring that, in several years, the only handguns that can legally be manufactured or sold in those jurisdictions would be personalized handguns. The Johns Hopkins Center for Gun Policy and Research has prepared a model law that would accomplish this.¹⁰

State Attorneys General can use their consumer protection power to issue handgun regulations that require handguns manufactured or sold in the state to be personalized. The Attorney General of Massachusetts has issued the nation's first consumer protection regulations regarding the safe design of handguns.¹¹

States and some localities can pass legislation that holds manufacturers and distributors of handguns liable for firearm injuries but exempts those guns that are personalized. The Mayor of Boston has sponsored such legislation.¹²

The federal government could authorize a federal agency to regulate the design of domestic handguns for safety, just as other consumer products are regulated.

Litigation

Injuries resulting from the unauthorized use of a handgun (i.e., childhood shootings and teenage suicides) may be compensable through product liability litigation against the gun manufacturer, if the handgun was not personalized.

Similarly, for injuries resulting from criminal shootings where the handgun used was stolen from a home, the gun manufacturer may be liable for failing to make the handgun personalized.

Data Collection

In order to evaluate the injury prevention effects of personalized handguns, the federal government could establish a national firearm injury reporting system, that collects information on every gun-related injury, including information about the gun itself.¹³

For a copy of the Center's report, *Personalized Guns: Reducing Gun Deaths Through Design Changes*, and its model personalized handgun law, *A Model Handgun Safety Standard Act*, contact: Johns Hopkins Center for Gun Policy and Research, School of Public Health, 624 N. Broadway, Baltimore, MD 21205, (410)955-3995.

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The Johns Hopkins Center for Gun Policy and Research

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Personalized Handguns: *Questions and Answers*

What is a personalized handgun?

A personalized handgun is one that, by design, can only be fired when operated by an authorized user. Personalized handguns are child-resistant.

Will personalized handguns prevent death and injury?

In 1995, guns killed 35,957 people in the United States.¹ Personalized handguns can significantly reduce the likelihood of many of these gun-related deaths and injuries. Most gun deaths involve handguns rather than long guns. Handguns are the weapon of choice for people purchasing a gun for home defense, for the suicide victim, and for the criminal.² One in every four households in the U.S. contains a handgun.³

Young children find handguns in the home and are able to fire them, shooting themselves and others. In 1995, 181 children 14 years old and younger were unintentionally killed by firearms.⁴ Children and teenagers also use guns found in the home to commit suicide. Suicide has become a leading cause of death among teenagers. The increase is due largely to gun-related suicides.⁵ Among young people 10 to 19 years old, there were more than 1,400 suicides with guns in 1995.⁶

It has been estimated that more than one half million guns are stolen from homes each year.⁷ Many of those guns are then illegally sold and used on the street.

Law enforcement officers are killed or seriously injured by their own or a fellow officer's handgun when a suspect or prisoner disarms them. On average 13 law enforcement officers are killed each year in this way.⁸

Personalized handguns can be especially effective in preventing unintentional firearm deaths and injuries among young children, teenage suicide, and shootings of police officers.

Does the technology to personalize handguns exist?

Yes. Many patents for personalized guns have been awarded in the last few decades. Colt's Manufacturing Company has developed prototypes of personalized handguns. The prototypes employ radio frequency technology. The authorized user wears a tiny transponder bearing a unique code. The firearm transmits low power radio signals to the transponder, which in turn "notifies" the firearm of its presence. If the transponder code is one that has been previously entered into the firearm, the firearm "recognizes" it, and it is enabled. Colt expects to market the handgun in the near future.

Do trigger locks personalize a gun?

No. A trigger lock is an accessory that requires several actions on the part of the authorized user for it to be protective. The authorized user must purchase the trigger lock, remember to reinstall the lock after every use, and use the lock correctly. Personalized guns provide automatic protection that is built into the design of the gun. Automatic or passive protection is far more effective in preventing injuries than those measures which require action on the part of the individual to be protected.

Can lives be saved by making products safer?

Yes. Many products have been modified to make them safer including motor vehicles, drug packages, and cigarette lighters. Government mandated changes in drug packaging have reduced the number of deaths from child poisonings.⁹ Safer cigarette lighters have saved the lives of an estimated 80-105 children under 5 each year.¹⁰ The decline in motor vehicle-related deaths and injuries over the last several decades has been largely the result of safer car design, such as laminated windshields, collapsible steering assemblies, dashboard padding, improved door locks, and air bags.¹¹

Will personalized handguns be expensive?

It is estimated that prices for personalized handguns will be higher than for ordinary handguns. Over time, as personalized handguns become more widely available, prices are expected to decline.

Will a personalized handgun address all gun safety issues?

No. There is still a risk that an authorized user will harm himself or someone else with the gun. But, just as antibiotics only address certain infectious diseases and not other diseases, the personalization of handguns will effectively address some of the risks posed by handguns.

Will personalized handguns make it safe to keep a gun in the home?

While personalized handguns will likely reduce the risks of some gun deaths, reliable studies still teach us that possessing a gun in the home is more perilous than protective.¹² Those who have chosen not to keep a gun in the home would be wise to continue with that decision. For those committed to keeping a handgun in the home, it would be best to destroy the old handgun and replace it with a personalized handgun.

Would non-personalized handguns be outlawed?

Not under present law. The Johns Hopkins Center for Gun Policy and Research has developed a model law for states and localities that would require handguns, manufactured after a certain date, to be personalized. The model law provides for the adoption of a performance standard for personalized handguns, develops a procedure for certifying the personalized handgun as complying with the standard, formulates a time frame for compliance, and provides for enforcement.

Established in 1995 with funding from The Joyce Foundation of Chicago, The Johns Hopkins Center for Gun Policy and Research is dedicated to reducing gun violence. For more information or for a copy of *A Model Handgun Safety Standard Act* and its companion document, *Personalized Guns: Reducing Gun Deaths Through Design Changes*, contact: The Johns Hopkins Center for Gun Policy and Research, School of Public Health, 624 N. Broadway, Baltimore, MD 21205-1996, 410/955-3995.

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