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National College of Art & Design

Faculty of Design

Department of Industrial Design

'DESIGN FOR KILLING'
THE EVOLUTION OF THE HANDGUN

BY
JOHN WALSH

SUBMITTED TO THE
FACULTY OF HISTORY OF ART AND DESIGN &
COMPLEMENTARY STUDIES
IN THE CANDIDACY FOR THE DEGREE OF
BACHELOR OF DESIGN

1999

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Introduction

Introduction

The topic I have chosen is firearms. In this thesis I will give an indept look at **handguns** and why they exist.

Firearms have been a major tool in shaping history, since the fourteenth century and the first effective '*gonnes*'. Firearms have captivated millions of hunters, shooters, and collectors and unfortunately have become a morbid fascination to some, such as the Dunblain and Arkansas killings of recent years. The fact is that if we condone them or not, our culture is obsessed with them. Most people don't have direct physical contact with them but we are surrounded by films, T.V, etc. which dish up an extraordinary amount of weaponry. To find a film without some kind of firearm would be a difficult task. Lets face it people like power and a gun gives enormous transformative power's to its bearer. Guns can conjure up images of glamour e.g James Bond or a person could be criminalized or sexualised by what is in their hand.

Eventhough it's a machine '*designed for killing*', the gun is mechanically ingenious while most often being simple and functional. To the delight of novice and pro alike, some firearms have the added features of hand embellishments.

The American '*firearm and shooting sports industry*' is estimated to be a 24-billion-dollar-a-year business. In 1995, 15,456 people were killed by guns in the U.S., both figures are extremely high and the latter the most concerning. When doing a thesis one must consider whether design factors impact the former (industry sales) which in turn affect the latter (the number of deaths).

The topic I have chosen is firearms. In this thesis I will give an indepth look at

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Firearms have been a major tool in shaping history. Since the fourteenth century and the first effective 'gunpowder' firearms have captured millions of hunters, shooters, and collectors and unfortunately have become a morbid fascination to some, such as the Taliban and Al-Qaeda's killings of innocent years. The fact is that if we condone them or not, our culture is obsessed with them. Most people don't have direct physical contact with them but are surrounded by films, T.V. etc. which dish up an extraordinary amount of weaponry. To find a film without some kind of firearm would be a difficult task. Look at it people like power and a gun gives enormous transgressive power to its bearer. Guns can conjure up images of glamour e.g. James Bond or a person could be criminalized or sexualized by what is in their hand.

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As a editor of ID magazine wrote;

“guns don’t kill people, people with guns kill people. Nevertheless, guns and design have a fascinating complex relationship.

A gun is a loaded signifier ; as prosthesis, technological artefact and object of loathing-or-design it skulks in the shadow of design culture. When it is not ignored, the gun is acclaimed as a pure receptacle of the modernist ideal, as an utterly functional instrument unsullied by the corruptions of style, fashion or status.” (Owen, William. **I.D Magazine** C. Pearlman 1996 p.56)

A gun must work, it is designed for killing. Gun people go so far as to quote from Louis Sullivan; *“form follows function”*. Advertisements portrait the image that gun purchase is a matter of survival not social status by using slogans like;

“choose wisely, live longer,”

or

“you can’t blame a piece of mechanisn, it has no morals.”

(Omaha, Nebraska, gun shop owner, **I.D Magazine** 1996,p56)

Morals or no morals the mechanism still kills and so why do we continue to develop, update and endorse them.

Chapter 1 discusses the American Constitution and the great American gun debate.

I will look at the evolution of the gun in chapter 2, from when the first handguns were developed and why.

In chapter 3 I will be looking at gun styles and personalization at handgun technology and the future of one to one weapons.



*"Americans have the right and advantages of being armed—
unlike the citizens of the countries whose governments are
afraid to trust the people with arms."*

—James Madison, The Federalist Papers

On April 19 1775 in Lexington, Massachusetts a group of British regulars encountered a small contingent of American militiamen. A minor battle occurred and yet the action was pregnant with consequences.

*"Here once the embattled farmers stood, and fired the shot heard
'round the world'"*

Militarily, it was the beginning of the American Revolution.

Philosophically, the assembled militiamen represented a facet of colonial development that would be a legacy to American constitutional theory.

The concepts supporting this group would be enshrined in the language of the Second Amendment to the Federal Constitution. From that time to the present, diverse people and groups, for political, personal, or philosophical reasons, have attempted to determine what is meant by the phrase "*The right to Bear Arms*".

The debate begins with the interpretation of the second amendment. The National Rifle Association (largest Pro-gun organisation) claim that each individual has the right to bear Arms whereas the Anti-gun organisations claim that it states that the National Guard has the right to bear arms and not the individual.

In the entire 20th century the Supreme Court has not decided a single case concerning the states' power to regulate firearms, and in the past generation's political debates about gun control legislation, the Second Amendment has played a marginal and, somewhat abject role. It has been waved talismanically by the (usually) losing side (consisting of firearms enthusiasts), who sense an 'abridgement' of their 'rights' in any firearms regulation, and scoffed at by the winning side (anti-gun advocacy groups and their allies in government), who argue that by its very terms, the Second Amendment guarantees only the rights of states to have

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well-regulated militias, and not the right of the individuals to have firearms. There is, then, (say the winners) no constitutional reason for society to put up with high rates of suicide, accidents, and lethal criminal violence caused by the too-easy availability of guns, especially when those problems can be curtailed by making firearms harder and harder to come by, if not downright impossible for private citizens to obtain legally.

If ever there was a situation designed to play on the inherent timidity of lower-court judges, this is it. There simply is no modern jurisprudence that explains to judges the meaning of “the right to keep and bear arms” and the scope of their authority to decide that a given piece of legislation constitutes an infringement of that right. The first question to consider then is what does the Constitution say about the right to keep and bear arms? There seems to be two theories; one is that, according to the intelligent lay public reads the words to say something like;

“In order to make themselves secure, states have a right to have a well regulated militia, and Congress may not restrict state regulation of militia members weapons.”

(Polsby, Daniel D. **Polsby on Guns**, www.reasonmag.com)

A view favoured by most major newspapers editorial writers, by gun control groups, and by a broad swath of conventional public opinion. The other theory being;

“because the people have a right to keep and bear arms, states will be assured of the well regulated militias that are necessary for their security” (Polsby, Daniel D. **Polsby on Guns**, www.reasonmag.com)

Some version of this reading is supported by almost all of the constitutional historians and lawyers who have published research on the subject, indeed, this view is so dominant in the academy that Garry Wills,

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the lone dissenter among historians on the proper reading of “the right of the people to keep and bear arms,” has dubbed it the standard model of the Second Amendment.

We can only extrapolate and conjecture about how the Founders would have understood the Second Amendment. The Founders of the United States were gun enthusiasts or what now a days would be called ‘gun-nuts’.

“One loves to possess arms,”

Thomas Jefferson wrote to President Washington (whose own gun collection, Don Kates notes, contained more than 50 specimens). And to his teenage nephew, the author of the Declaration of Independence had this to say:

“A strong body makes the mind strong. As to the species of exercises, I advise the gun. While this gives a moderate exercise to the body, it gives boldness, enterprise and independence to the mind. Game’s played with the ball, and others of that nature, are too violent for the body and stamp no character on the mind. Let your gun therefore be the constant companion of your walks.”

(Polsby, Daniel D **Polsby on Guns** www.reasonmag.com)

And James Madison, author of the Bill of Rights, recognised;

“ the advantage of being armed, which the Americans possess over the people of almost every other nation, whose tyrannical governments are ‘afraid to trust the people with arms.’

(Madison, James **Polsby on Guns** www.reasonmag.com)

With these strong pro-gun activists behind the whole constitution it’s not surprising to see so many guns in America’s society today.

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The National Rifle Association, through its Eddie Eagle Program (fig1),

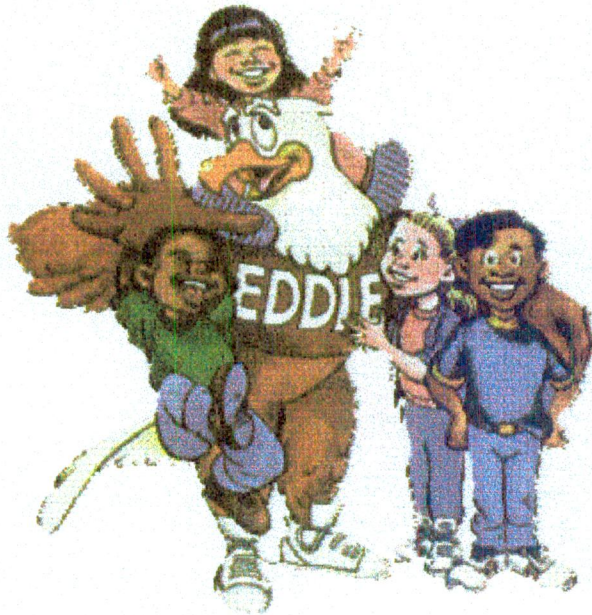


Fig (1) 'Eddie Eagle'

reaches about a million children each year with a simple message about what to do if they come across a gun:

"Stop! Don't touch. Leave the area. Tell an adult."

That is sound advice, which any youngster would benefit from hearing. But the Violence Policy Center, which favours assorted restrictions on gun ownership, says Eddie Eagle is just a clever way to addict impressionable children to gunpowder. In an article in the Chicago Tribune on the 16th November 1997 entitled, "*Joe Camel with feathers*" the organisation proclaims that the NRA and the firearms industry are making guns more acceptable to children and youth and

"recruit them into the gun culture, using strategies similar to those utilised by America's Tobacco industry."

(Violence Policy Center, **Gun Control** <http://chicagotribune.com>)

As the NRA notes Eddie Eagle never handles a weapon, he doesn't convey the impression that firearms are fun or cool, and he doesn't appear "*where guns are being used, displayed or sold.*"

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The critics are on both sides, it tends to be media and the Violence Policy Center against NFA. Gun control people say to reduce firearm fatalities you have to take the gun away from everyone, pro-gun people say

“that makes perfect sense, if you think the way to stop drunk driving is to outlaw cars.”

(Chapman, Steve **Gun Control** <http://chicagotribune.com>)

A front page Wall Street Journal article entitled “*Armed Force*” by Erik Larson (2/4/93) on a personal protection course for women by defensive firearms trainer Paxton Quigley, cited the world’s most notorious statistic regarding guns in the home.

“A pioneering study of residential gunshot deaths in King County, Washington, found that a gun in the home was 43 times more likely to be used to kill its owner, spouse, a friend or child than to kill an intruder.”

(Gerard, Gary **Scare Stats** www.goal.org/articles/43.html)

It is remarks and statistics like this that enrage the pro-gun people whom inturn quote their own statistics.

“A gun is 25 times more likely to be used to defend against criminal threat than to kill anybody.”

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Pro-gun people say that the media is unfair and exaggerates gun-related deaths.

“Even the most conservative estimates show nearly two million Americans annually use a gun to defend their life. That’s a lot more than those who misuse them, but murder sells newspapers.”

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"Even the most conservative estimates show nearly two million Americans annually use a gun to defend their life. That's a lot more than those who misuse them, but murder sells newspapers."

An American is about 70 times more likely to be killed with a gun than a Briton”

(Yacino, Michael D. **Lifestyles** www.goal.org/articles/lifestyles.html)

A FBI Uniform Crime Report of 1992 stated that;

“the total Violent Crime Rate is 26% higher in the more restrictive states than in the less restrictive states.”

(Covey, Preston K. **Gun Stats & Mortal Risks** www.goal.html)

The Homicide rate, robbery rate and aggravated assault rates are all higher in the restrictive states according to carrying concealed weapons (CCW) statistics. Such a report makes serious critical implications on the existing gun-laws. Americans use firearms for self-defence

“more than 2.1 million times annually”

(FBI Uniform Crime Report, www.planet/~rcomer/father.txt)

By contrast, there are about 579,000 violent crimes committed annually with firearms of all types.

There is an outstanding amount of pro-gun and anti-gun organisations in the United States.

“No free man shall ever be debarred the use of arms”

-proposed Virginia Constitution, 1776. Quoting from ‘On crimes and punishment, by criminologist Cesare Beccaria,

“an unarmed man may be attacked with greater confidence than an armed man.”

(Jefferson, Thomas **America’s Founding Fathers**

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(Yasno, Michael D. *Lifestyles with good organizational styles* (http://www.yasno.com/))

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By contrast, there are about 279,000 violent crimes committed annually with firearms of all types.
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-proposed Virginia Constitution, 1776. Quoting from "On crimes and punishment" by criminologist Cesare Beccaria.
"an unarmed man may be attacked with greater confidence than an armed man."

(Jefferson, Thomas *America's Founding Fathers* (http://www.jefferson.org/))

This is perceived to be a true statement with the pro-gun organisations. The firearms problem isn't a new one and has been around for centuries

"When the resolution of enslaving America was formed in Great Britain, the British Parliament was advised by an artful man, who was governor of Pennsylvania, to disarm the people; that it was the best and most effective way to enslave them; but that they should not do it openly, but weaken them, and let them sink gradually, A well regulated Militia composed of the body of the people, trained to arms, is the proper, natural, and safe defence of a true state."

(Mason, George **America's Founding Fathers** www.planet/~rcomer/father.txt)

When it comes to self-defence the pro-gun lobby have a very strong case,

"Defence with a gun results in fewer injuries (17%) than resisting with less powerful means (knives, 40%; other weapon, 22%; physical force, 51%; evasion, 35%; etc.) and in fewer injuries than not resisting at all (25%). Compared with any other means of defence, rapists and other vicious predators are far less likely to complete their attack when the innocent defender uses a gun."

(Suter, Edgar A. **Violence Policy Center Targets Women's Choice** www.shadestanding.com)

There is no denying this, but it is in getting the weapons from the hands of the non-law abiding citizens that the problem lies. In most states in America the gun laws aren't very restrictive and a highly dangerous weapon can be obtained legally in a matter of hours.

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 America the gun laws aren't very restrictive and a highly dangerous
 weapon can be obtained legally in a matter of hours.

This is probably the main reason for such violence.

"The French are all armed to the teeth with about 40 million privately owned firearms for a population of about 57 million but gun violence is rare because gun ownership is concentrated among hunters, marksmen, and collectors."

(Laushway, Ester **Europe:Magazine of the European Community** p.42 UMI Apr 1994)

Whether gun laws exist or not guns may still be obtained easily in the streets and flea markets. In Italy, only requests for gun licences by very rich people are taken into consideration because it is believed they might need them to defend themselves against possible robberies or kidnappings, in this way, gun licences have become status symbols. This is not the case in America since weapons are so easily obtainable. The corruption roots can be categorised from several different areas, unemployment parental upbringing, the immediate society, peers, gun laws along with others. Second Amendment faithfuls believe

"that the disarming of individual law abiding citizens will result in the loss of individual freedoms"

(Williams, Paul **Active National Pro-Firearms Organisations**
www.planet/~rcomer/progun.txt

There is an enormous amount of conflicting views from pro-gun and anti-gun people that a satisfactory medium is impossible. A gun is an instant source of individual, effective protection and in a morally unbalanced society such an object is very much desired especially by women. According to research presented at the 5th Annual Marketing and Public

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 According to research presented at the 5th Annual Marketing and Public

Policy Conference, increasing numbers of women are buying guns. (fig2)

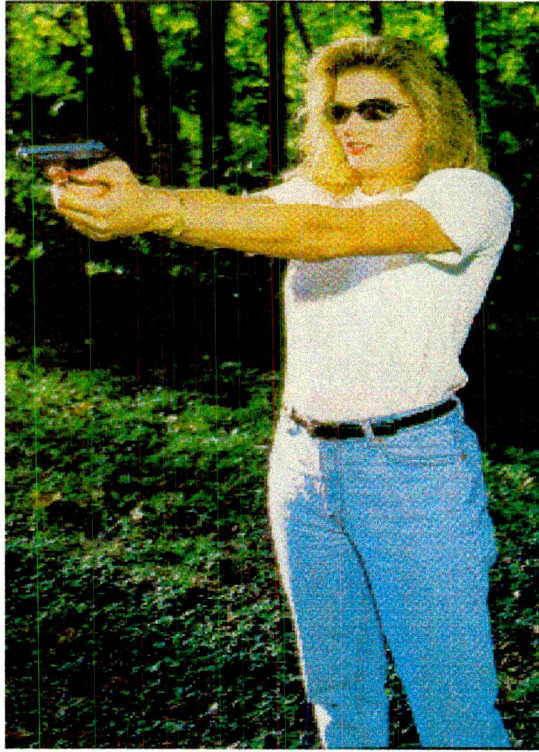


Fig (2) 'Jennifer Owensby uses a Walther TPH'

In one survey, 27% of respondents said they owned a handgun, and 65% said they had access to one. Smith & Wesson sell

"one of every 10 handguns to a woman"

(Rubel, Chad **Marketing News** p.2 UMI Jul 1995)

A study of how the firearms industry markets to women found that

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The developing technologies don't help the crime victims very much with laser sights, range finders and others, unless they possess a weapon themselves. (Fig3)



Fig (3) 'Laser Sights'

These sniper-type devices are not really increasing the problem since most of gun-related crime is up close in the home, workplace or on the street, often called drive-by-shootings. The splintered American opinions about handguns are reflected in a patchwork of state and local laws that confuse gun owners, aggravate law enforcement officials and draw headlines when tragedy strikes. What's legal in one state could land you in hot water in the state next-door. Overriding federal gun laws touch on only a few areas, while state and local laws have daily impact on gun ownership and use. In New York state, for example, permits from local courts are required for all handgun purchases. Local sheriffs and Police

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Fig. 3. Laser Sights.

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departments then have up to six months to process applications. Once sales are complete, all handguns must be registered. Permits to carry concealed handguns are relatively hard to come by, issued only at the discretion of local law enforcement officials. But in neighbouring Pennsylvania, handgun permits are not required and firearms are not registered. Local law enforcement officials have just 48 hours to complete a background check of prospective gun purchasers. Anyone who meets a few basic requirements can get a permit to carry a concealed handgun. Neither state recognises the other state's permit. A lot of the reason why you have such a patchwork for gun control laws is because the National consensus has never been reached. Absent a unified national view of guns, most legislative action has been at the state and local level. The result is that some jurisdictions enact strict gun-control regulations while others move in the opposite direction. Some say that this is where the problem lies. A person can buy a gun easily and legally in one state and sell it illegally in the next. One would think a national consensus of a national uniform rule on handguns would be the answer, but then what about rural dwellers (Fig 4) belief that knocking a few live one's before

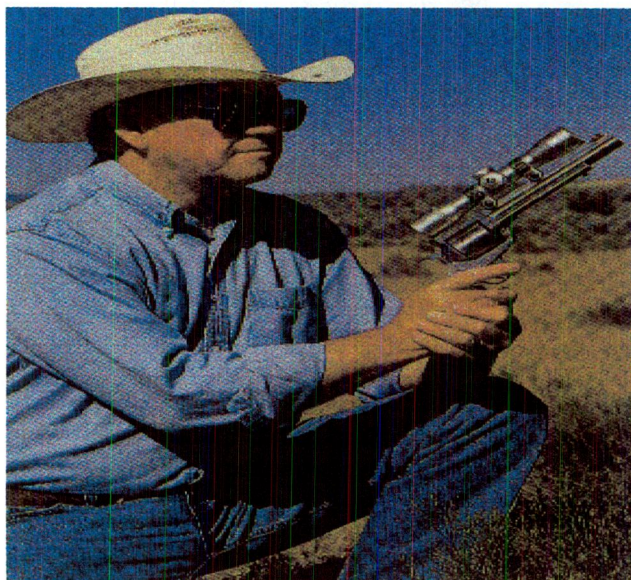


Fig (4) Clair Rees hunting with a Ruger Super Blackhawk

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Fig 4) Gun Kees hunting with a Ruger Super Blackhawk

Sunday tea might be jeopardised, you still have conflicting opinions. Nearly two-thirds of Americans think the Constitution should guarantee the right of the average citizen to own a handgun, but they also want the government to regulate gun ownership. There's a competing set of positive and negative symbols attached to guns in America. The negative is that guns are used to commit crimes, but on the positive side you have the history, the frontier. Whether it's because Americans grew up watching John Wayne and Clint Eastwood (Fig5) or learning about the

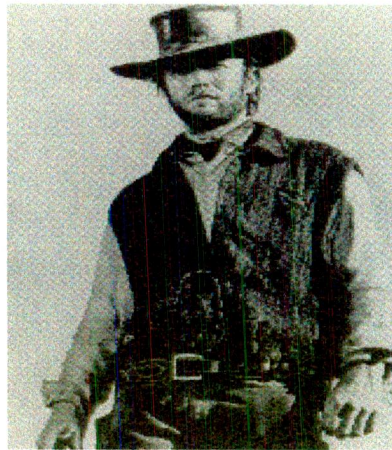


Fig (5) 'Clint Eastwood'

Minutemen at Concord, the end result is that most simply believe they have the right to own a gun.

It's as ingrained in the national culture as the idea that people should be free to travel wherever they want.

In a National Survey of Americans attitudes about guns conducted for the Hearst Newspapers by International Communications Research, one national figure probably summarises America's mixed emotions towards guns best of all. Even though a large majority of the people think gun ownership should be a constitutional right and almost half have owned guns at some time, almost two out of every three Americans think their society as a whole views gun owners in a negative way.

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Chapter 2

The first reference to firearms of any kind is in an English manuscript of 1326, '*De Officialis Regum*' (On the Duties of Kings) in which there is an illustration of a small cannon being fired (Fig6),



Fig (6) 'Small cannon being fired'

but it was not until the closing of the century that technology had evolved sufficiently to allow the first 'hand gonne' to appear.

This was a development of the 'ridaudequin', which appeared in about 1380: it consisted of a number of small-calibre cannon barrels mounted on a small cart, (Fig7) the barrels were spread apart so that their shots would be in a fan shaped arc at the front.

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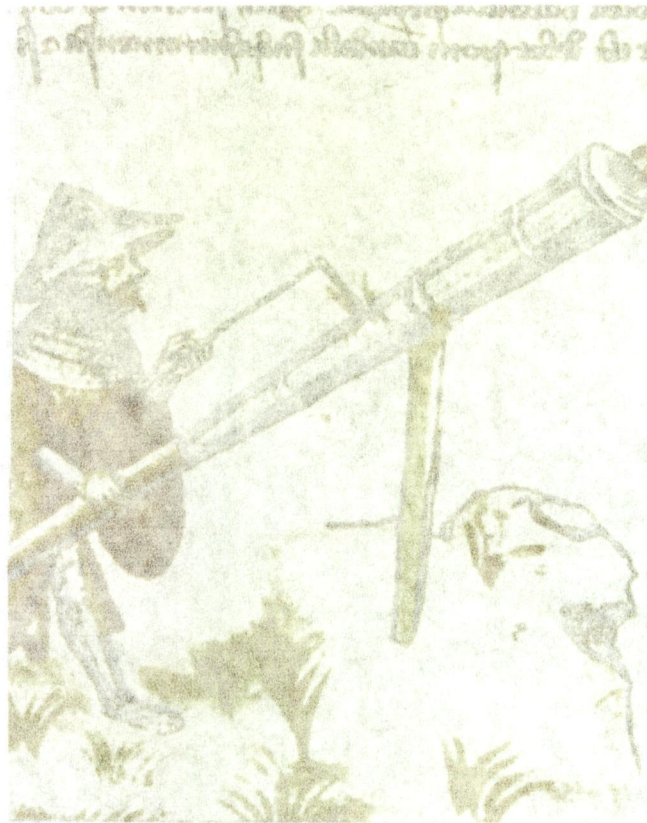


Fig 6) Small cannon being fired.

but it was not until the closing of the century that technology had evolved sufficiently to allow the first "hand gonne" to appear. This was a development of the "trabouche", which appeared in about 1380; it consisted of a number of small-calibre cannon barrels mounted on a small cart (Fig 7) the barrels were spread apart so that their shots would be in a fan shaped arc at the front.

These weapons were effective but couldn't be removed from the cart, this meant that anyone coming suddenly from the side, they couldn't deal with.



Fig (7) 'Small-calibre cannon'

The logical thing to do was to attach a wooden pole to one of the barrels and one person could move around. With a burning rope and a barrel loaded with powder and shot, this person could tuck the weapon under his arm and aim it.

He could apply the burning rope to the vent of the gun igniting the powder, which was the first portable handgun on the battlefield. The 'hand gonne' was therefore the transitional stage between the cannon and 'small-arms' prior to this it was assumed cannons were proceeded by hand-held weapons since it is customary to make things large at first and then reduce their size. Gun powder was dangerous and something strong and heavy was needed which could incase the powder and fire at arms length to discover the effect or power and then reduce it and bring it closer to the body, once it was safer.

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Fig (7) Small-calibre cannon

The logical thing to do was to attach a wooden pole to one of the barrels and one person could move around. With a burning rope and a barrel loaded with powder and shot, this person could tack the weapon under his arm and aim it.

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So the first handguns were just portable cannons which could be casted rather than using strips of metal. The earliest known specimen was the 'Tanenberg gun' which was hexagonal in shape, weighing about 1.2kg, 32cm's long with an 18mm bore, made of bronze, some were made of iron like specimens found at Vedelspang in Germany. (fig8)

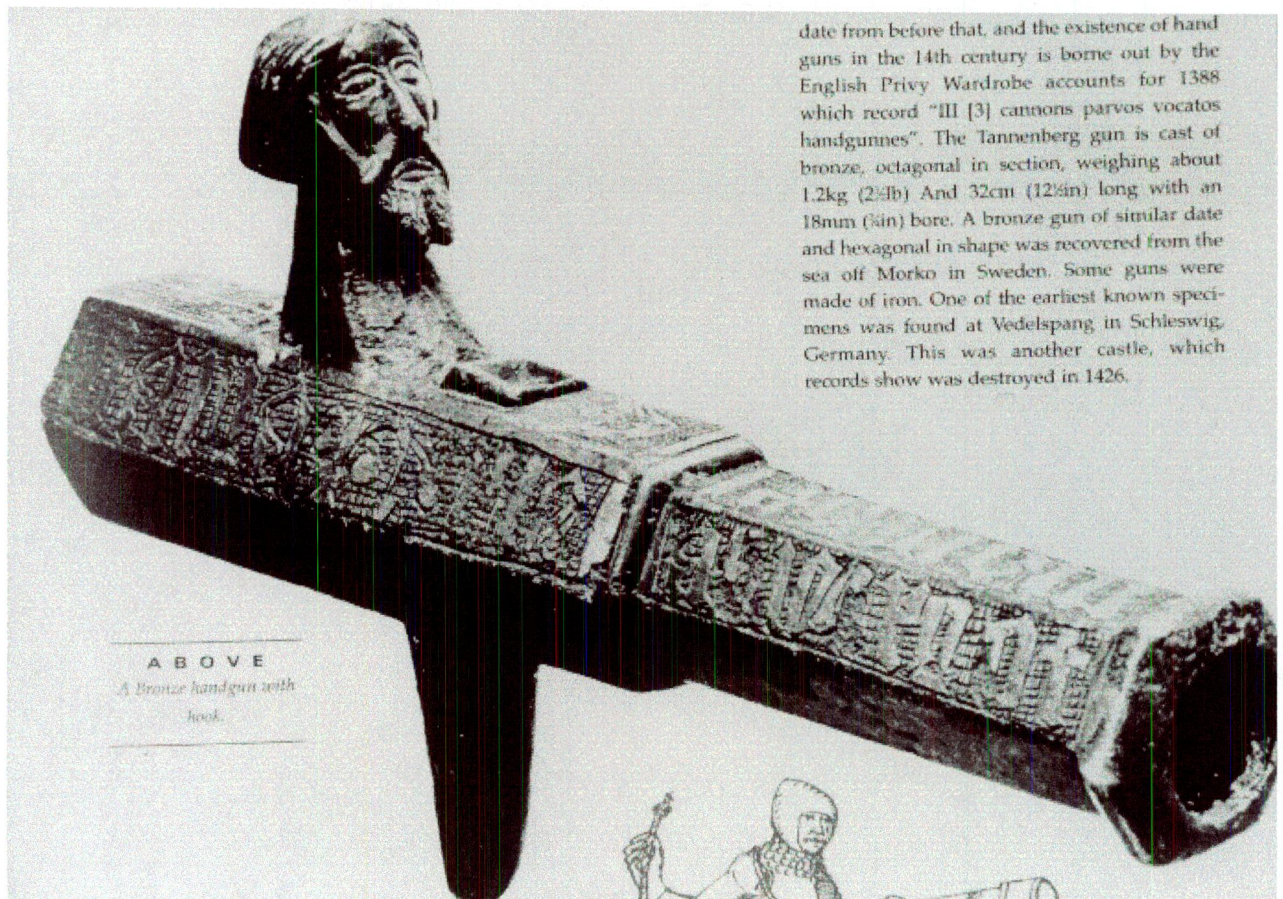


Fig (8) 'Tanenberg Gun'

Both these guns have a large lug or hook beneath the barrel. These were used to hang a gun over a wall or wagon. The Vedelspang guns barrel was extended to form a long iron stock with a knob at the end, which was probably used as a handgrip. In some early 15th century drawings, illustrations showed the gunner taking aim by looking along the barrel. Yet in 1411 some thought was given to the direction of firing. A German engraving of that year showed a handgun with a 'serpentine matchlock', a

So the first handgrips were just portable cannons which could be carried rather than using strips of metal. The earliest known specimen was the "Lanchberg gun", which was hexagonal in shape weighing about 1.2kg, 12cm's long with an 18mm bore, made of bronze, some were made of iron like specimens found at Veddispang in Germany. (figs. 1-4)



Fig. 1-4 Lanchberg Gun

Both the Lanchberg gun and the Veddispang gun were used as portable cannons, or as a wall or wagon. The Veddispang gun barrel was extended to form a long iron stock with a knob at the end which was probably used as a handle. In some early 15th century drawings, these arrows show the gunner taking aim by looking along the barrel. Yet in 1431 some thought was given to the direction of firing. A German engraving of that year showed a handgun with a 'receptive matchlock', a

S-shaped piece of burning slowmatch so the gunner could use both hands to hold and fire. As the design became more effective and accurate, contests began, between firearms and competitive shooting occurred around the 16th century. (fig9)



Fig (9) 'A Matchlock musketeer of 1607'

This was displayed by the engravings on the gun, which showed they were frequently held and honours evenly divided.

The first attempt at mechanically firing a handgun was the serpentine, a curved piece of metal with a lighted match at the one end which could be brought into contact with the touchhole of the cannon. Later on developments meant the match (length of tow, twisted from hemp, flax or cotton soaked in saltpetre) was moved by activating the trigger rather than gravity. These matchlocks were mainly used by Arquebusiers

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(Spanish Infantrymen) in the 1400's and Spanish Conquistadors. Trading prisoners in Latin America in the 1500's.

This led to the invention of the wheel lock (fig10).

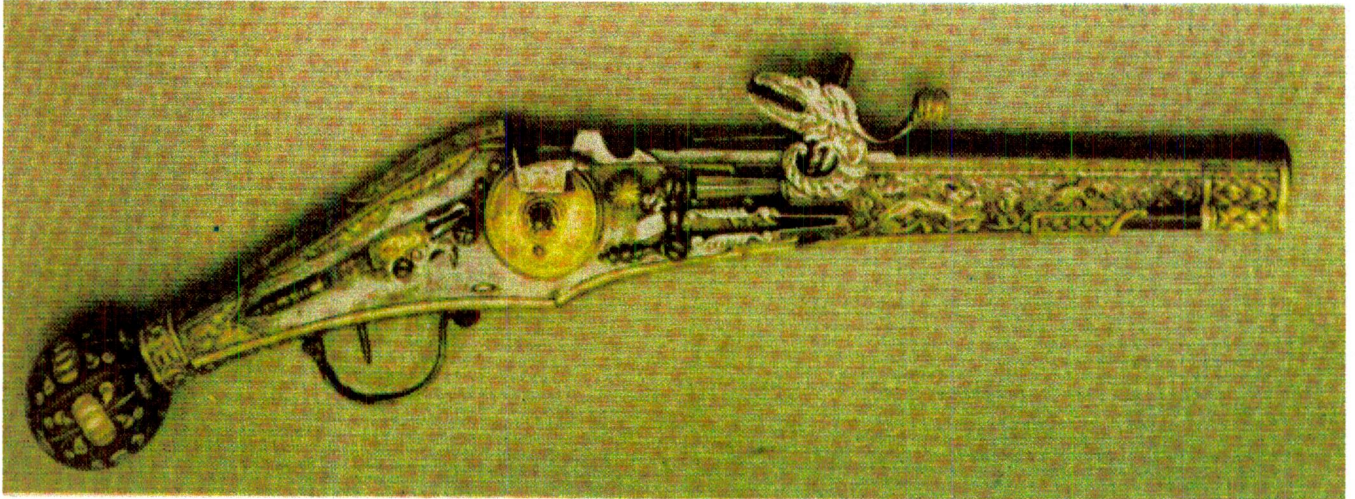


Fig (10) 'German wheel-lock, 1590'

One of the most important steps in the development of firearms, which was developed by Leonardo Da Vinci among others. This was the first self-contained ignition system. This concept was welcomed by the Calvary who were now able to carry these arms into battle with them mostly German soldiers of the 17th century. Concern soon developed that these weapons could be a serious security problem, since an assassin could conceal a weapon until he was close to his unsuspecting target. It was inevitable that the idea of a flint would be introduced and this was called a Flintlock (fig11).

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Fig 10) German wheel-lock, 1570

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It consisted of a cock with jaws, which held the flint, which in turn was struck onto a plate (frizzen) which produced a spark. These frizzen's and cock jaws were upright to the main body of the gun and inticed the engravers to decorate them with symbols of medieval dragons with gapping jaws all very intimidating to the eye. These were the first real

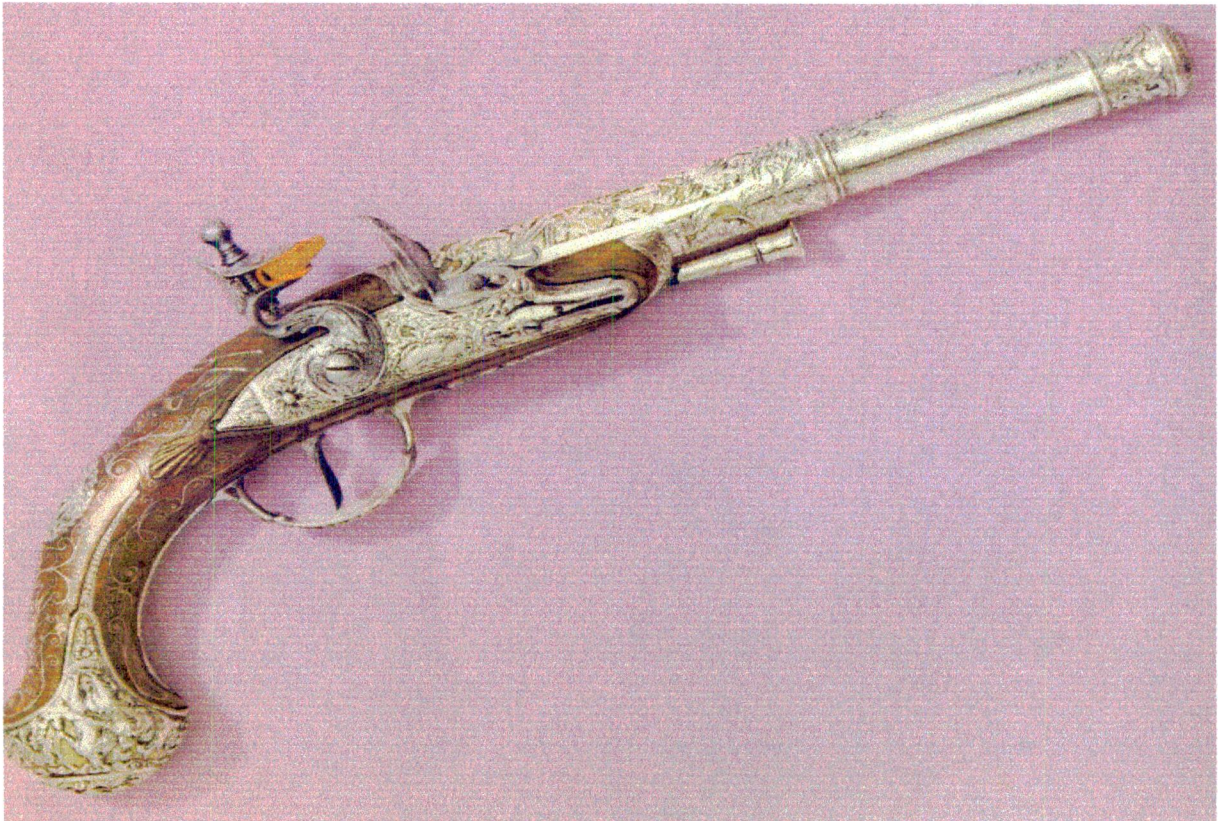


Fig (11) 'silver barrelled flintlock pistol'

images reflected by firearm and roughly the beginning of the gun being portrayed as a status symbol. People and armies began to throw away their swords and look to firearms to do the work. They were developed to be more mobile, quicker and more effective i.e. kill more people more quickly.

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Fig. 1. A silver barrelled flintlock pistol.

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As the 'gones' became more mobile they had a big effect on society. Firearms needed them if they were to be as successful as the holders of

such weapons, if they were to stand any chance of survival. This made them more popular and more developments inevitable.

The Flintlock was a cheap method of equipping whole armies with reliable firearms using mechanical ignition. A highly skilled gunsmith could produce a weapon that was just as effective. The development of the flintlock was instrumental in reducing the price of firearms and spreading their ownership and use. Captain Gustave Delvigne of France suggested a cylinder shaped bullet with a conical nose instead of a lead ball which often deformed causing an inaccurate shot, but it took him several years for him to convince the French army to adopt this rather than the ball. By making the rifling only just stabilise the bullet, its power to cause physical injury is increased because of its rapid destabilisation on impact this was the idea of the 'Minie bullet' which was self expanding. The 'minie bullet' was used extensively during the American civil war, it was the most common round used by the confederates and the union army. In recent years high velocity artillery has reverted to smoothbore barrels using fins to stabilise projectiles, in an attempt to obtain the highest possible velocities for the penetration of armour. Reverend Alexander Forsyth, vicar of Belhevie in Scotland who had a keen interest in game shooting discovered the percussion lock. Then Joe Manton a famous gunsmith invented a percussion tube, a thin copper tube that was inserted into the vent of the gun and hit by the falling hammer.

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The person responsible for the biggest advances of the revolver was Samuel Colt. (Fig12)

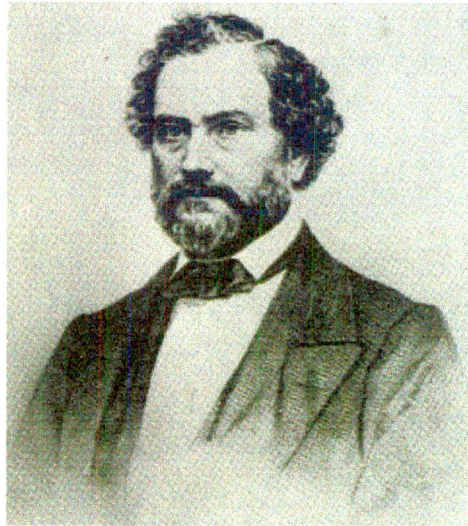


Fig (12) ' Colonel Samuel Colt'

Colt revolutionised the design which, wasn't invented by Colt but because all existing features and methods weren't patented he used them and brought them together harmoniously and produced an elegant whole mechanical product. He obtained a master patent and anyone who attempted to produce a revolver using mechanical devices to revolve the cylinder soon found themselves on the receiving end of a writ from Colt's lawyer's.

The modern handgun was born with the expiry of Colts patents in 1849 and 1857 which ended his stranglehold on the development of self-indexing, revolving cylinder handguns in Great Britain and America. In 1856, Horace Smith and Daniel Wesson formed the American Company that still bears their name, Smith and Wesson, in order to develop and subsequently manufacture a revolver using the French metallic rimfire cartridge. In so doing, they started the American firearms industry on a half-century of rapid evolution. Today the term 'handgun' is reserved for pistols and revolvers, and 'smallarms' is used for all shoulder and hand-

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fired weapons of less than 15mm bore. "Pistol" is sometimes used to describe all handguns, but it's more preferable to separate out revolving cylinder handguns (revolvers). Pistol is better used for single-shot and static multi-barrelled or self-loading 'semi automatic' handguns. Handguns are principally used as personal defensive arms, but the German Rieter cavalry used pistols with devastating effect to attack the French at the battle of Renty in 1544. Handguns have been used more recently for covert and special military operations where their concealability and lightweight have proved to be vital. Colt's expired patent of his revolver design in 1849 meant others could advance with their designs. During this patent (1835-1849) there wasn't any manufacture, it was only to block competition. A London gunsmith Robert Adams (Fig13)



Fig (13) 'Robert Adams'

soon produced a solid frame trigger-cocking cap-and-ball revolver in 1851. On April 3, 1855, Rollin White designed a revolver, which included cylinders, which were bored through from end to end. In 1856

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Smith & Wesson joined forces, in order to acquire this new design patent. This was also the year Smith & Wesson departed from the Volcanic Arms Company manufacturing Henry and Browning-designed lever action rifles and carbines owning the Rollin White patent, Smith & Wesson were in a commanding position for handgun manufacture when Colt's US patent on the revolving cylinder expired in 1857. By using the patent, Smith & Wesson became the only significant manufacturers of metallic cartridge revolvers, and because of the demand they created, were soon two years behind on deliveries. Smith & Wesson's patent lasted for 12 years during which time about 50 gun-makers had begun producing revolvers, but were limited to the cap-and-ball design and used extensively during the American Civil war in early 1860's. The Rollin White patent expired in 1864, this opportunity was seized by manufacturers who had survived the war. Samuel Colt died in 1862 but his company survived and in 1872 the famous Single Action Army was produced. (fig14)



Fig (14) 'Colt .45'

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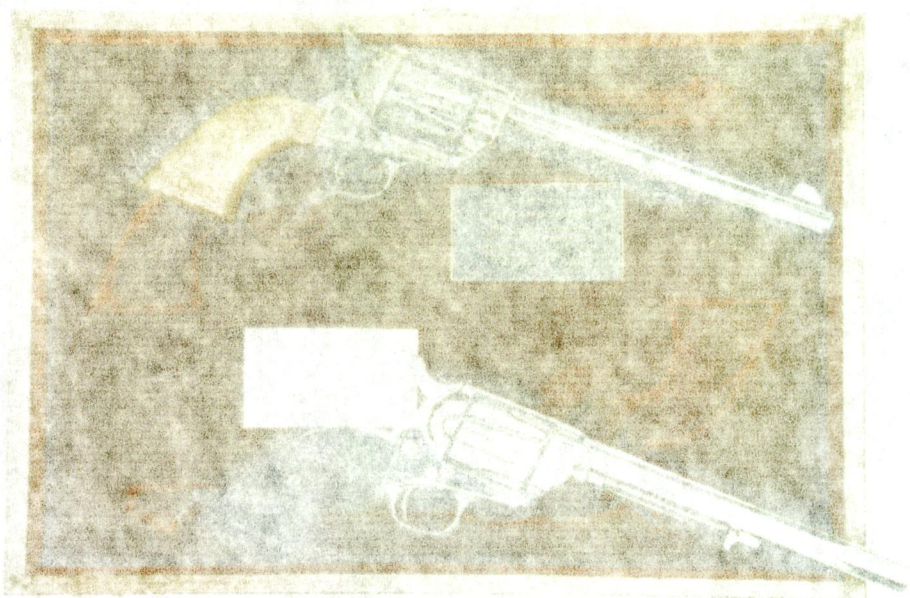


Fig (14) Colt 42.

The Colt .45 firearm was the first to be manufactured on the assembly line and also the first product to use standardised interchangeable parts. It was Colt's first solid frame revolver, and had rod ejection, which pushed out the fired cases one at a time. Undoubtedly the most famous gun of all time was the .45 'Peacemaker', 'six-shooter', and 'Hog-Leg', among others. It was a refinement of Colt's original design and lived up to its name in the American Wild West, *'the gun that won the west'*. The Colt revolver was a favourite with the Texas Ranger played a big part in the Mexican War.

When William Mason designed the Colt.45 he didn't expect it to be immortalised by Hollywood in the American television Western's like it was. This was a revolutionary era for firearms. Before the Colt .45 nothing was standardised nor deserved to be. The simple undecorated form of this standardised product reflected the method of its manufacture. Up until now the firearms weren't effective and all time and effort was devoted to its practicality and its effectiveness rather than the aesthetics. Most people say that the Colt .45 was the beginning of gun design to an extent because now a standard weapon was produced and ergonomics, aesthetics and materials could be applied. The Americans love of the Colt .45 left the Europeans to develop the double action revolver, which could be fired by trigger cocking, or by first hand-cocking. The British Army and Royal Navy contracted Colt's single action handgun instead of Roberts Adam's trigger-cocking percussion revolver in 1851. The British Army adopted the Beaumont-Adams double action percussion revolver for use in the Crimean War in 1854 which later was converted to breech loading. The Webly brothers secured an official contract to supply the Royal Irish Constabulary with six shot .422 in double action cartridge revolvers in 1867. The .422 Webley was adopted as the British service pistol, an association which lasted intermittently through two world wars

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until the revolver was superseded by the self loading Browning pistol in 1957. (fig15)

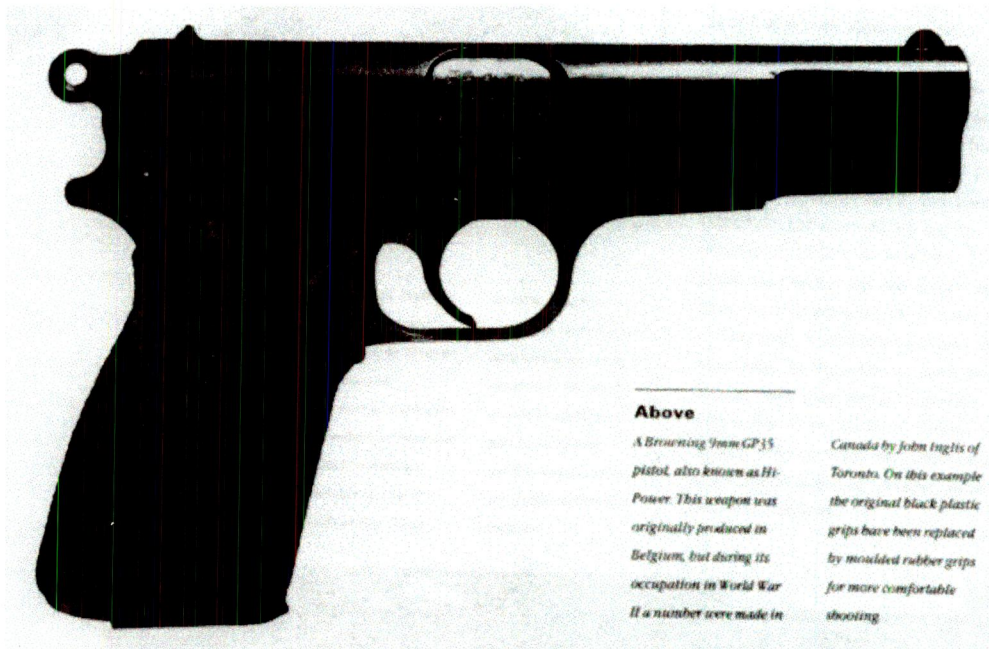


Fig (15) 'Browning 9mm GP35 or Hi-Power'

Colts first double action revolvers were produced in 1877 and Smith & Wesson in 1880. The Iver Johnson Company introduced the transfer bar safety lock in 1896. In 1896 Smith & Wesson produced their first Swing-out cylinder revolver. Whilst there have been changes in frame size, cylinder locking points and construction materials since the turn of the 20th century, the current Smith & Wesson revolvers show no significant design initiatives over the models of the early 1900's. (Fig16)

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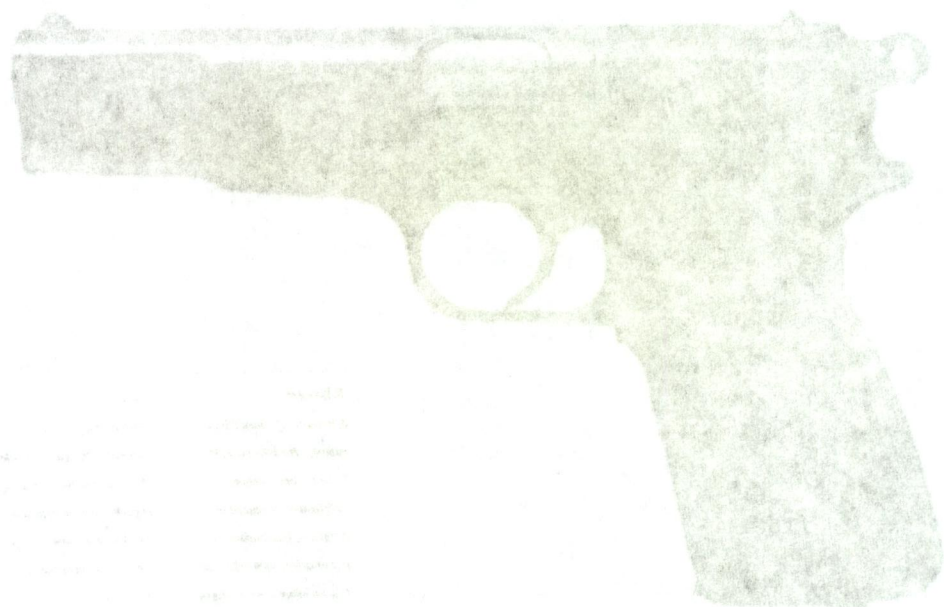


Fig (15) Browning Hi-Power GP35 or Hi-Power

Colts first double action revolvers were produced in 1873 and Smith & Wesson in 1880. The Iver Johnson Company introduced the transfer bar safety lock in 1896. In 1896 Smith & Wesson produced their first swing-out cylinder revolver. Whilst there have been changes in frame size, cylinder locking points and construction materials since the turn of the 20th century, the current Smith & Wesson revolvers show no significant design initiatives over the models of the early 1900's. (fig16)



Fig (16) 'Modern day swing-out revolver system'

Similarly Colt's model 1889 Navy Double Action's basic design principle remained for the next 90 years. (Fig17)



Fig (17) 'Colt Navy revolver, 1851 model on the left & a 1855 model, Adams-Beaumont .44 calibre revolvers'

The second part of the 19th century arms developments was in Europe because of the military Conflicts and social unrest at that time. Revolver design reached an elegant peak in England in 1896 with the Webley-Fosbery.

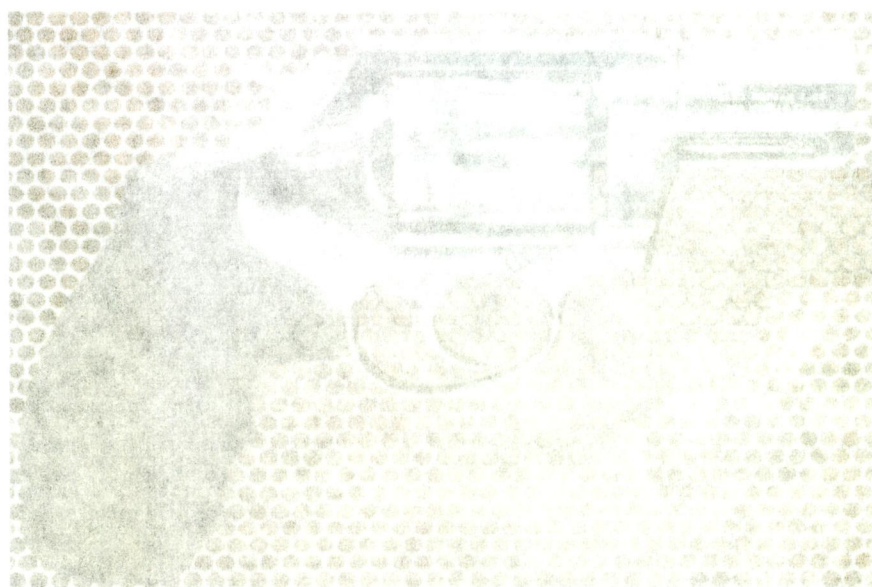


Fig (16) 'Modern day swing-out revolver system'

Standard Colt's model 1849 Navy Double Action's basic design principle remained for the next 90 years. (Fig 17)



Fig (17) Colt's Navy revolver 1849 model on the left & 1852 model Adams-Brownmont 44 calibre revolvers.

The second part of the 19th century arms developments was in Europe because of the military conflicts and social unrest at that time. Revolver design reached an elegant peak in England in 1850 with the Webley-Fosbery.

In 1893 Hugo Borchardt patented a toggle-jointed self-loading pistol based on the Maxim machine gun. George Luger improved Borchardt's design. After overcoming objections from Colt and Browning, Luger's parabellum pistol, in 7.65mm calibre was sold in the U.S in 1904, four years after it was sold in Europe. (Fig18)



Fig (18) 'The Luger 7.65mm calibre'

The calibre was upgraded to 9mm and offered to the British Army in 1902, but they turned it down. In 1908 the German Army adopted the 9mm Luger and started its journey to becoming the most popular service pistol ammunition in use today. The rifle makers Mauser produced 'the Broomhandle' military pistol in 1896. (Fig19) It didn't win any military contracts but was popular. It had the ammunition magazine located in front of the trigger guard, a design perpetuated today in target pistols. This allows modern pistols to have a low bore line in relation to the grip, making recoil easier to control.

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Fig (18) The Luger 7.65mm calibre

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Fig (19) 'The Mauser 'Broomhandle' 1896'

The most prolific arms designer of the last century was the American John Moses Browning. He worked with Colt to produce the model 1905 pistol, later developed into the 1911. After the Great War it was improved slightly to the 1911 A1 and sold over 2.5 million. It was replaced as the U.S issue sidearm by the Beretta 92F 9mm pistol in 1985 after 74 years. Colt still use, their 1911 design today. (fig20)



Fig (20) 'Modern day 1911 A1'



Fig (19) 'The Mauser-Broomfield', 1906

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Fig (20) 'Modern day 1911 A1'

The Browning model 1935 in 9mm Luger cartridge, also known as the GP35 or High Power, was developed from locked breech designs. FN patented the designs in 1927, and following its launch in 1935 the GP35 became the most popular military pistol of the non-communist countries. Browning's domination of self-loading pistol design is still apparent today, many of the new pistols launched retain his recoil operated delayed blowback principles. A new modern design, the German Heckler & Koch P7 9mm self-loading pistol utilises propellant gas to aid its operation. The 9mm Luger is too powerful a cartridge to be used with ease in a lightweight, straight blowback pistol. The P7 uses a gas-retarded action, where some propellant gas is bled off from the barrel into a cylinder machined in the frame, into which the recoil spring guide fits. When the bullet leaves the slide can then recoil, now being controlled by recoil spring. The P7 also uses squeeze cocking, where the pressure of the shooters grip cocks the hammer/striker prior to firing. (Fig21)



Fig (21) 'The Heckler & Koch P7'

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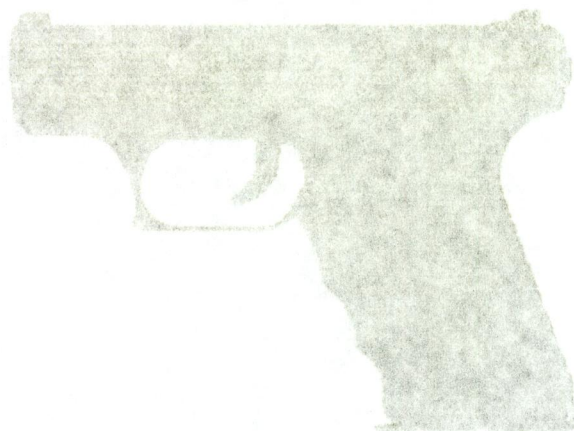


Fig (21) The Heckler & Koch P7

If the grip is released, the pistol decocks. This system eliminates the need for safety catches or a combined double and single action trigger mechanism. The Heckler & Koch engineers adapted the roller-locked breech from their self-loading rifles and used it to slow down breech and slide movement in a different form of delayed blowback on their P95 pistols. (fig22)



Fig (22) 'Heckler & Koch P95'

Gas operation makes self-loading pistols bulky and complex, as well as requiring a very powerful cartridge to generate enough gas to cycle the action. The Wildey pistol has made it to the market with two calibre options, both produced specifically for it, the .45 Winchester Magnum and the 9mm Winchester Magnum. The Wildey utilises a rotating breech block as well as gas operation, a feature shared by the Israel Military Industries 'Desert Eagle Pistol', which fires the .44 Magnum and .357 Magnum rimmed revolver cartridges. (fig23) Both of these large handguns were designed with handgun hunting (and the growing metallic silhouette shooting sports) in mind, rather than for self-defence. Once the principles of self-loading operation in handguns had been mastered, attempts were soon made to make pistols fully automatic. The problem is that small handguns are uncontrollable in fully automatic fire, with most of the ammunition wasted on the sky.

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Fig (22) Heckler & Koch P95

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Fig (23) 'Desert Eagle Pistol'

In Europe, Heckler & Koch and Beretta have both produced elegant burst fire self-loading pistols, which can fire up to three shots with one pull of the trigger. The H&K VP70 (fig24)

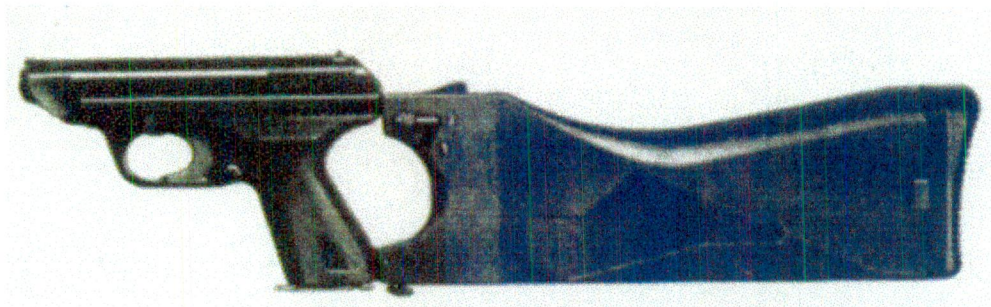


Fig (24) 'The Heckler & Koch VP70 with shoulder stock'

can only be used for burst fire with a shoulder stock, and the Beretta 93R is also best used with one to maintain control. The disadvantage of burst fire operation is that a small, 20-round magazine is soon emptied, and it is



Fig. (23) "Desert Eagle Pistol"

In Europe, Heckler & Koch and Beretta have both produced elegant burst fire self-loading pistols, which can fire up to three shots with one pull of the trigger. The HK VP30 (fig.24)



Fig. (24) "The Heckler & Koch VP30 with shoulder stock"

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preferable to use burst fire in heavier, high magazine capacity, or closed bolt machine pistols.

Despite the early advances in handgun design and development, only five types have survived the passage of time and remain today, the single-shot, derringers, revolvers, self-loading pistols, and assault pistols.

Strong, single-shot pistols are now chambered for high performance rifle cartridges, and are used for sporting target shooting and hunting.

Derringers have always been an extremely close-range handgun, used for defence, known throughout America as 'Saturday-high-specials'. (Fig25)



Fig (25) 'The Bond Arms Derringer'

Since they usually have two fixed barrels it is easy to chamber them for a range of calibre's from .22 rimfire up to .45-70 and .223/5.56mm. The revolver with double action trigger is very popular, and is used for law enforcement, personal defence and target shooting: its predecessor, with a single action hand-cocked trigger, is now used with powerful new calibre's for hunting. (Fig26)

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Fig. 1.25 The Bond Arms Derringer

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Fig (26) 'The .357 Magnum revolver'

The lightweight self-loading pistol has been favoured by armies since the First World War, and is now being used for law enforcement and defence. (Fig27)

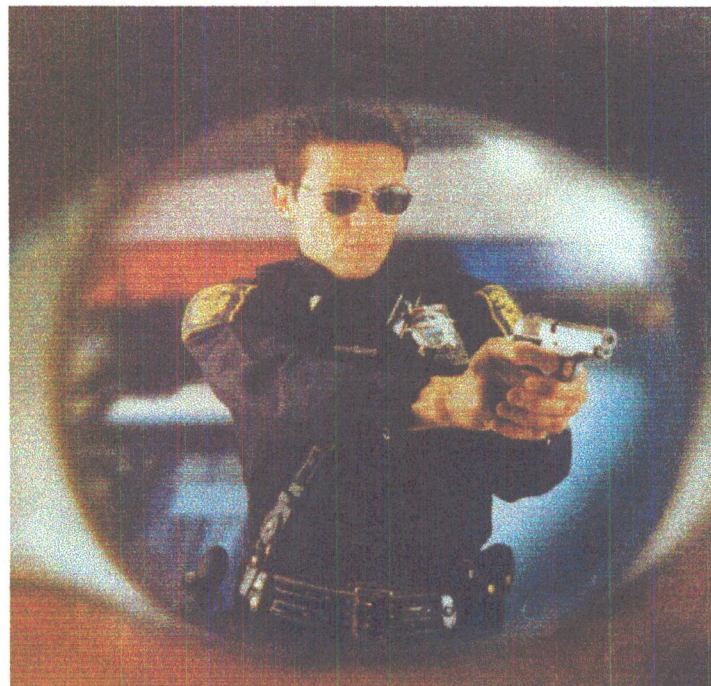


Fig (27) 'Police Officer uses a Colt self-loading pistol'

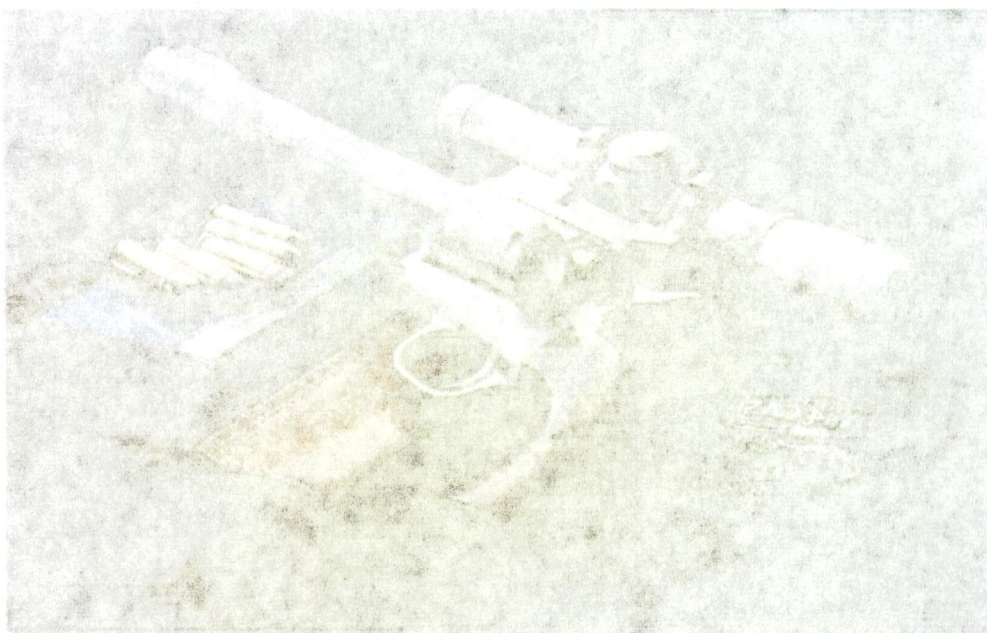


Fig. (26) The 357 Magnum revolver.

The tight eight self-loading pistol has been favored by armies since the First World War and is now being used for law enforcement and defense.

(Fig. 27)



Fig. (27) Police Officer uses a Colt self-loading pistol.

Sophisticated small calibre self-loading pistols are used for international target shooting. (Fig28)

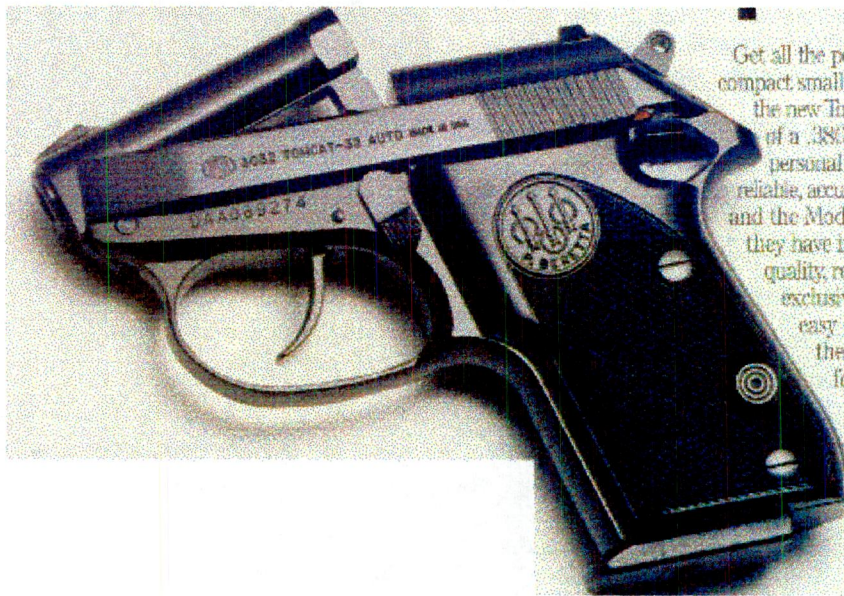


Fig (28) 'The Beretta .32 calibre'

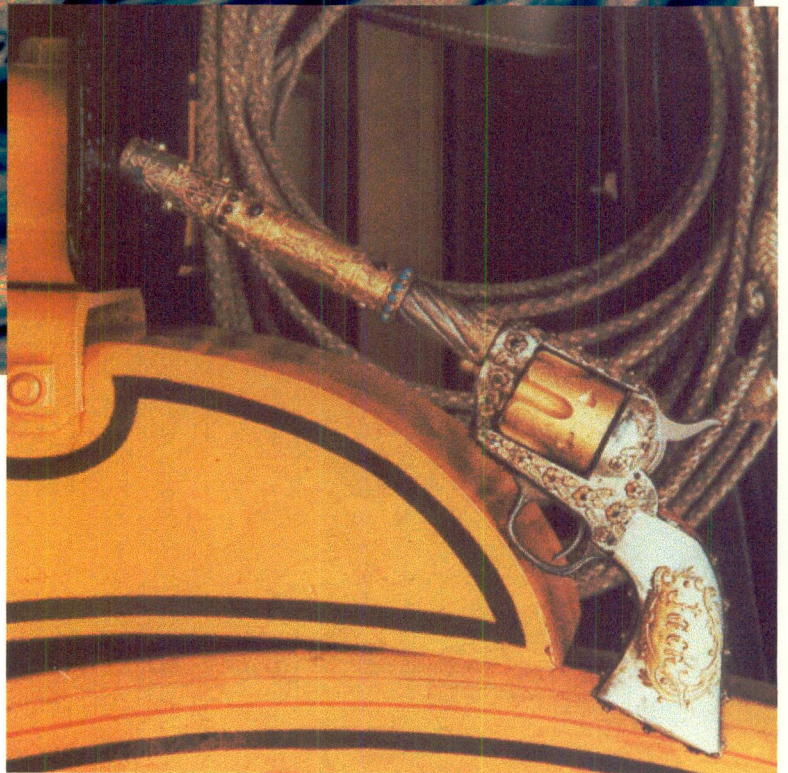
The final group, the closed bolt assault pistol, has been derived from small open bolt machine pistols, and share many of their design features, including similar high capacity ammunition magazines. The principal users of assault pistols are law enforcement agencies.

Sophisticated small caliber self-loading pistols are used for international target shooting. (Fig 28)



Fig (28) - The Beretta 3.2 caliber

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Chapter 3

The earliest known encarvings on handguns date back to the 14th Century. Some of the Eastern Japanese decoration usually portrayed dragons and medieval images (Fig29).



Fig (29) 'Japanese Handgun about 16th Century'

The muzzle usually appeared from the mouth of a dragon, which were highly worshipped. This image depicts the idea that it is a dragon, which is attacking the target rather than a mechanical object. The first richly decorated or glamorised firearms were the 17th century matchlocks. Most products of this time were highly decorated, even though there were a lot of invasions, warfare and conflict, people were highly refined and their clothes and possessions resembled this and firearms naturally fell into this category. The carvings usually showed users of the gun, Calvary or things the gun was used for, like pictures of animals etc. (fig.30)

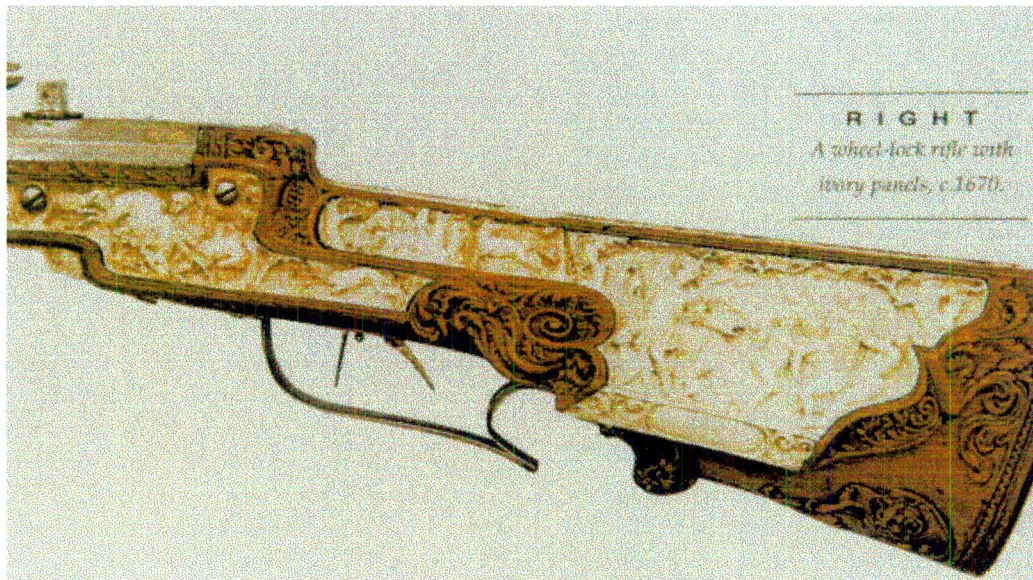


Fig (30) 'Wheel-lock rifle with ivory panels, c.1670'

These firearms were refined, beautiful but yet none of them became immortal like the simplistic Colt .45. The .45 single action bore very little engravings or refinement so what made it so popular?

The fact that it was the first gun to use standardised interchangeable parts wouldn't affect the consumer only the manufacturer. So it was the simplicity of its full proof design, the recognisable shape and inexpensive price tag that made it the archetypal "cowboy's gun".

We can conclude from this that a gun must look like a 'gun' i.e. cold, mean and ugly. The gun is a complete functional instrument, its performance overrides style, fashion or status. Gun people believe in the dictum '*Form Follows Function*'.

They say that gun purchase is a matter of survival not social status.

'I can waltz into this neighbourhood and not worry about my car, my house, or my 5'4" female frame without getting so much as a whistle. My possession of a firearm has made these 'punks' polite. Essentially, my neighbourhood proves that excellent Heinlein (Robert A. Heinlein) line. 'An armed society is a polite society'.

(Rachel M. '**Women & Guns**' <http://teapot.usask.ca.com>)

“Every 10 seconds a gun is made in America; every 9 seconds one is imported, adding over 6m guns annually to the estimated 230 million already in private circulation, nearly one per citizen. Unless the guns are fully automatic, they are subject to virtually no federal restrictions”

(Unknown, **‘Guns in America: Home on the range’** ABI/Inform 1994)

A gun uses maximum force to prevent or deter so its;

“use constitutes failure and invites retaliation. A gun must therefore signify its threat by making a fetish of its own functionality”

(Owen, William **‘I.D Magazine’** p.57 Sept/Oct 1996)

The first point, which should be considered when designing a gun, is that it must look like a gun. Gun designers and users are inherently traditionalist. The Smith & Wesson .38 introduced in 1899 is still available today and had only one minor design change in 1902. (Fig31).

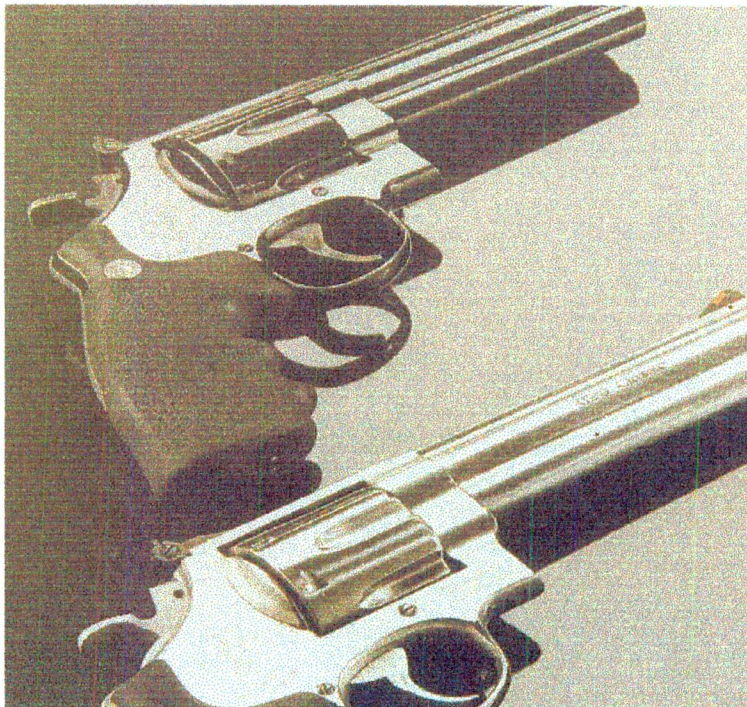


Fig (31) ‘Smith & Wesson .38 calibre revolver’

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Fig. 1. Smith & Wesson Model 10, .38 caliber revolver.

The technology of the gun today is the same as it was in the 14th Century. The reason for this is that designers are required to create a confined explosion, which sends a projectile towards a target, and this is within a strict and standard configuration.

It must be formed to fit the human hand, contain a barrel, stock and breech. Despite the traditional limitations style played a prominent role in marketing and design. The product manager at Smith & Wesson states that

“a firearm is no different from an other product. Its design is based on engineering and aesthetic needs. Aesthetics play a role, especially as more states legalise guns. There is a whole new uninitiated consumer group and they are very influenced by aesthetic presentation.”

(Owen, William ‘I.D Magazine’ p.58 Sept/Oct 1996)

In a 1996 National Rifle Association fact account, there are 230 million guns in the US and 60-65 million Americans own a gun. The firearm industry says that gun buyers are like everyday consumers, that they are fashion victims, but don’t purchase as frequently.

Manufactures are now producing a mainstream of firearms and the market is undergoing one of its periodic upheavals –

“A new brutalism is taking hold in gun design”.

(Owen, William ‘I.D Magazine’ p.57 Sept/Oct 1996)

Curves are going out and boxy shapes and flat planes are in. No shiny chrome or nickel but black stainless and synthetic matte finishes, heavy steel is out and plastics, carbon fibres, transparency ergonomics are in.

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Curves are going out and boxy shapes and flat planes are in. To satisfy chrome or nickel but black stainless and synthetic matte finishes, heavy steel is out and plastic, carbon fibre, transparent, ergonomics are in.

Guns like the SIG (fig32) and Glock (fig33) are in and guns such as the Smith & Wesson .357 Magnum are out except with a certain cadre of die-hard fetishists.



Fig (32) 'Smith & Wesson's SIG'



Fig (33) 'Glock 35'

... and the ... (1933) and the ... (1933) ...
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Fig. 1. Smith & Wesson Model 100



Fig. 2. Smith & Wesson Model 100

“The Glock pistols have become famous because it’s one of the few guns in the world that incorporates polymers (plastics) into its frame. The popularity of this gun derives from a combination of the light weight, due to the polymer, but also from the manufacturers high priority of functionality. The polymer frame gives the gun its very own appearance – usually when people see a Glock for the first time, they say it’s down right ugly. This might be true for some, but for me and for other Glock owners it’s quite the opposite. ‘Beauty lies in the eye of the beholder...’

(Goran, G. ‘**Glock Perfection**’ <http://isa.dknet.dk/~goran.htm>)

Gun design, technology and style usually are active in spasms of intense activity, and the current spate of change began in the 1980s when consumer and police markets in America began to be overcome by innovative polymer-based automatic pistols from Europe. Smith & Wesson revolver sales had gone into decline and they had to change to auto-pistols. In the military market of the same era the understanding of what constitutes “gun” was redefined by the new generation of carbines, in which the magazine and breech are located behind the trigger in the stock. Until recently the revolver has remained almost unchanged since the 19th century in the U.S. where tradition was valued most. Those who have used weapon as fetishized personal statements, have ignored the novelty side and relied on hand embellishments.

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The craft industry of custom gunsmiths has established itself as a huge industry providing extremely expensive, hand built decorative weapons, made for individual prides and prejudices (fig34).



Fig (34) 'Colt 1911 with hand carved engraving'

The revolver has remained supremely popular with police forces in particular, stating that not much can go wrong with a basic mechanism is an over-engineered frame (i.e. a man's gun). The Colt .45 is an example of this 'man's gun' or frontier gun. A European semi-automatic pistol is sneaky and alien in comparison and doesn't live up to the traditional 'macho' image.

Although gun people deny the fact that the gun is a status symbol, 'Choose wisely, live longer'. Perhaps it's not to them but it is to many. It was the Colt .45 and its rivals, which caused the beginning of the macho image. It was purely a functional gun and only purchased for this reason

The cost of a factory-produced handgun has established itself as a huge industry, providing a low-cost, easy-to-use, hand-built, built-to-order weapon. It made the most recent public and private (fig. 1).

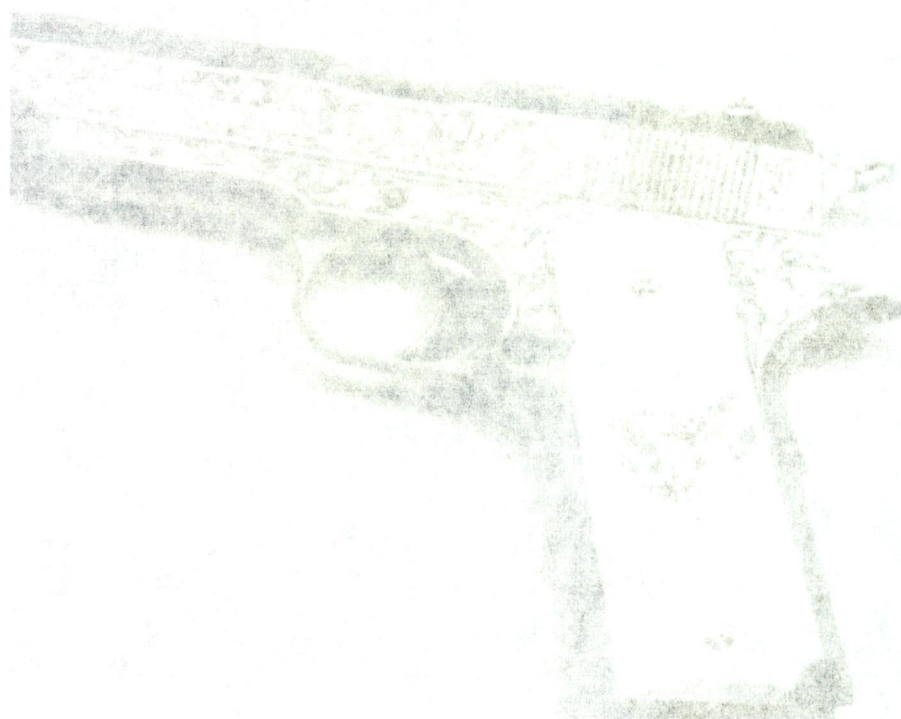


FIG. 1. Colt 45 (1911) with hand-cord engraved.

The revolver has remained a primary popular with police forces in particular, serving as a not-in-reach can go wrong with a basic mechanism is a over-engineered form (i.e. a man's gun). The Colt 45 is an example of this man's gun, or rather gun. A European semi-automatic pistol is much more alien in comparison and doesn't live up to the traditional

machines image.

Although gun people deny the fact that the gun is a status symbol, it is. Perhaps it's not to them but it is to many. It was the only one of its kind, which caused the beginning of the machine image. It was purely a functional gun and only purchased for this reason.

at first but later style, fashion and status crept in. The reason these weapons attracted such a macho image was because they were heavy, ugly and powerful, very unfeminine in character. They were designed by men for men, men who were in service hence the name army revolvers. It wasn't until guns began to be used more for self-defence at home for personal protection that gunsmiths began designing more female orientated guns.

They became smaller and had more of a glitzy look. An example of this was the 1940's pearl handled vintage Colt 'Ladies gun'. Picture the aforementioned and the Colt .45 Magnum Anaconda a 'mans gun' side by side (fig35)

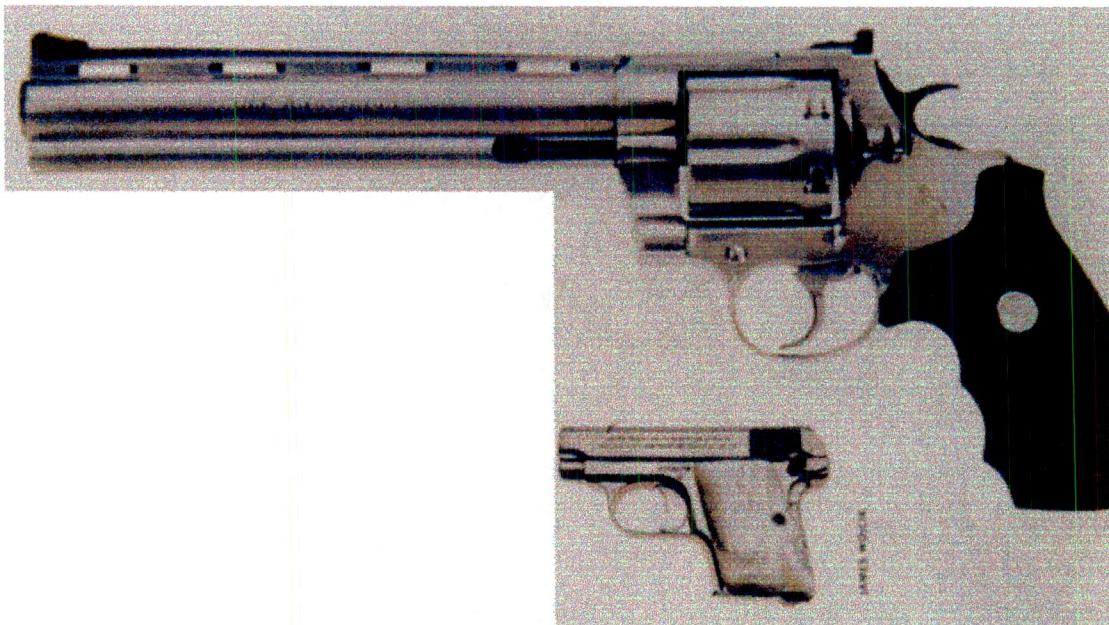


Fig (35) 'The Colt .45 Magnum & The Colt 'Ladies gun'

it depicts the traditional view of the female being the weaker sex. The heavier, bigger, more powerful .45 magnum and the smaller, lighter and prettier magnum. It is the image of the aesthetics, which is concentrated on most, making it a fashion accessory rather than a 'lethal weapon'.

in fact had fairly good reason and some credit in the reason there
 and the other side which made things worse because they were heavy
 and not very reliable very maintenance in the way they were designed for
 and the reason was that in service these things were very reliable
 and the gun was used more for self-defense at home for
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 was the 140's pump handled vintage Colt .45 caliber gun. Picture the
 aforementioned and the Colt .45 Magnum / Remington a more gun style of
 the (fig. 1)

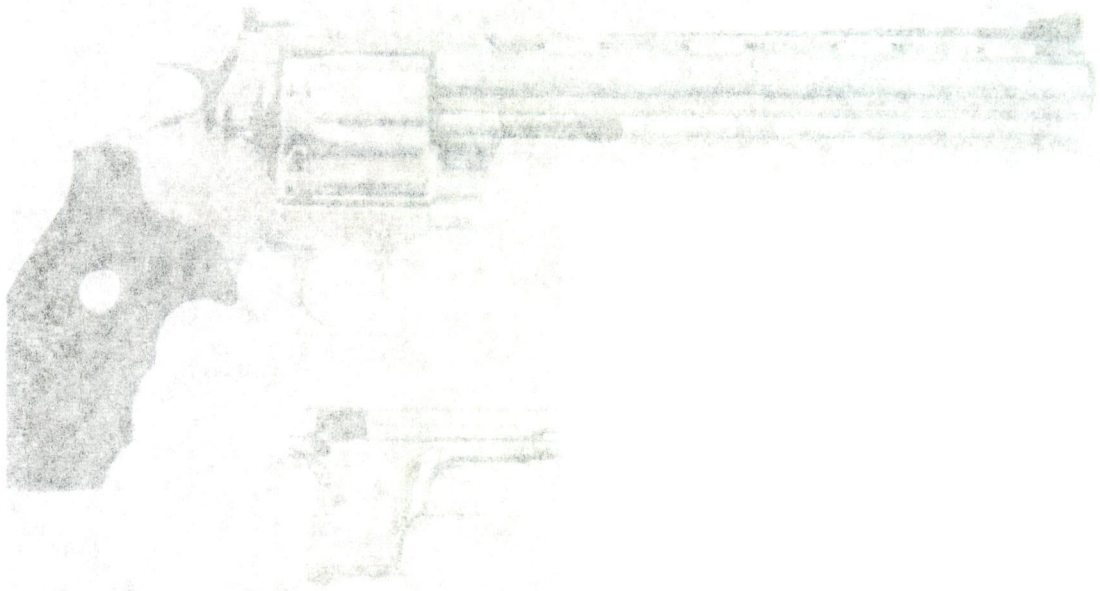


Fig. 1 - The Colt .45 Magnum & The Colt .45 caliber gun

it depicts the traditional view of the female being the weaker sex. The
 women were more powerful in the 19th century and the smaller, lighter and
 more reliable. It is the image of the aesthetic which is a contrast
 on most modern day fashion society from a liberal response.

Despite this, they are both used for the same functional use; they both kill. The consumer market gun styles are inspired by the tool chest, the jewel box, the entertainment industry and the military. The new design changes by Glock have a military feel or image, and yet it has come to dominate the home defence market including the women's market.

'The handgun is the ultimate in feminine protection'

says a NRA spokeswoman. The glamour of the jewel handle or pretty carvings is going out and the mean boxy shapes are in. Guns can now be purchased in the glamorous streets and not the mean city streets according to business writer Rachel Beck –

"Now you can look among the Hermes scarves, Tiffany diamonds and Louis Vuitton luggage in the city's priciest shopping district".

(Beck, Rachel 'Glitzy Gun Shops' The SanDiego Daily Transcript p.1)

Michael Zirno, owner of the Downtown rifle and Pistol, one of New York City's premier shooting ranges says

"before, it was frowned upon to own a gun, now it's a chic thing. It's a hobby of the elite".

(Beck, Rachel 'Glitzy Gun Shops' The SanDiego Daily Transcript p.1)

Gun enthusiasts are cheering on the arrival of glitzy gun shops, others believe that their presence glamorises gun use. Gun control groups claim the shops are using fashionable clothing and other products to lure people in.

"The gun industry likes to make believe their product doesn't kill"

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said Josh Superman, executive director of the Violence Policy Centre.

Despite this, they are both used for the same functional use, they both kill. The consumer market gun styles are inspired by the real world, the jewel box, the entertainment industry and the military. The new design changes by Glock have a military feel or image, and yet it has come to dominate the home defense market including the women's market.

The handgun is the ultimate in feminine protection. Says a NRA spokeswoman, "The glamour of the jewel handle or pretty carvings is going out and the mean boxy shapes are in. Guns are now being purchased in the glamorous streets and not the mean city streets." According to business writer Rachel Beck -

"You can't look among the Holmes screws, Tiffany diamonds and Louis XV iron hangers in the city's priciest shopping district." (Beck, Rachel, "Gilty Gun Shops," The San Diego Daily Transcript p.1)

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Gun enthusiasts are cheering on the arrival of glitzy gun shops, others believe that their presence threatens gun use. Gun control groups claim the shops are using fashionable clothing and other products to lure people in.

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Through stores like this *'they are trying to pretty it up'*. This is a clever attempt to remove the stigma from guns. They want to normalise guns to make people think that its just another store on the block.

Shoppers agree that the jackets, ties and safari gear may draw them into stores.

"This is the place to shop now"

said Morge Klein, a New Yorker who frequents this shopping district.

"The country look is in"

(Beck, Rachel **'Glitzy Gun Shops'** The SanDiego Daily Transcript p.2)

said Marge Klein, a New Yorker.

The fact that crime has increased is a factor when considering the reasons for this surge.

"Sexual assault, aggravated assault or stalking and various other forms of predatory criminal activities are what drive these women to firearms as the single most effective means of personal defence"

(Dissell, Jeff **'Feminists & Firearms/The Conservative Dinner'** www.femfire.html)

But purchasing a firearm for self-defence is not the only reason why more people are obtaining firearms. The reason is the symbolism it portrays.

Hollywood is the main culprit when it comes to the glamour, the macho-ism, the bravado hero's, the larger then life image, 'The over-exaggerated clicking of the shiny magazine and reloading procedure and then the climatic burst of thunderous power from the hands of the cult hero.

Heroes such as Clint Eastwood in the 'Dirty Harry' trilogy and the more recent John Travolta in 'Pulp Fiction' or 'Reservoir Dogs' (fig36) or Bruce Willis in the 'Die Hard' episodes to name but a few. All these films's etc. are pumping weaponry into our lives and we are not even conscious of it!

Through stores like this 'they are trying to protect us'. This is a clever attempt to remove the stigma from guns. They want to normalise guns to make people think that it's just another store on the block. Shopkeepers expect that the jackets, ties and safari gear may draw them into stores.

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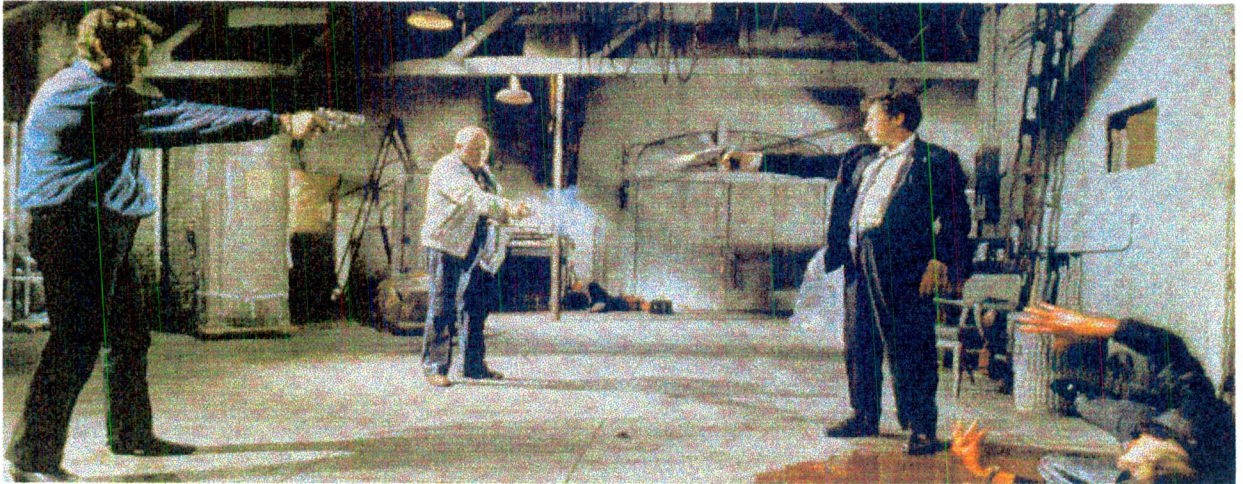


Fig (36) 'A scene from Reservoir Dogs'

Hollywood has always glamorised violence and the gun is central to this.
(fig37)

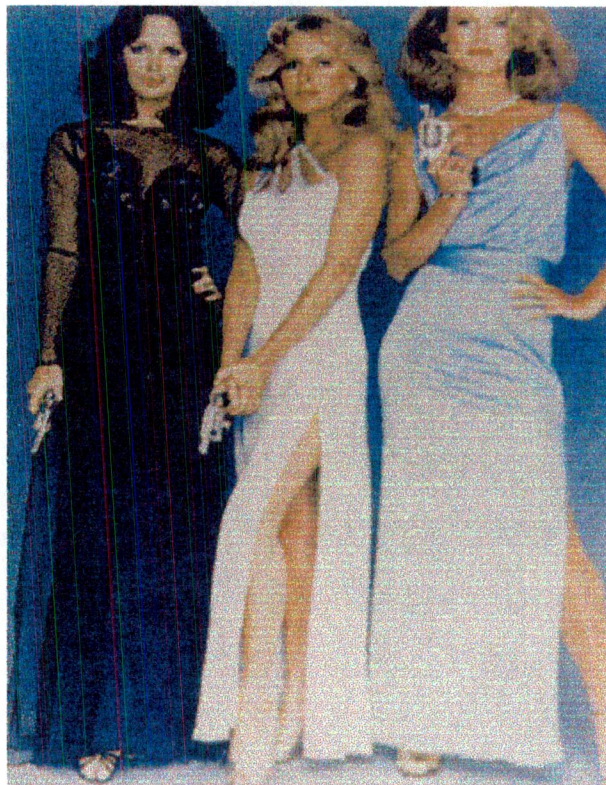


Fig (37) 'Gun Glamour, Charlie's Angle's'



The family in front of the carriage.

Hollywood has always been a place of glamour and the end is a story of a...

(1927)



The family in front of the carriage.

Names such as 'Magnum Force' and 'Lethal Weapon' have become an independent 'star' in their own right. Rock bands have a image of being hard, cold and mean, the gun is well suited because of its own image of being a '*mans gun*'. Rock groups have named their bands after weapons like 'Guns 'N Roses' because of what they symbolise.

America had no visual tradition, it had to invent its own and Hollywood was the main medium by which this new America was assimilated. The image of good and evil values were translated into the heroes of the 'Big screen', the hero was the one with the power i.e. the one with the gun.

(Fig38)



Fig (38) 'Lara Croft in Tomb Raider, video game'

Names such as 'Mighty Force' and 'Lethal Weapon' have become an independent part of their own right. Rock bands have a image of being hard, cold and mean, the gun is well suited because of its own image of being a 'mean' gun. Rock groups have named their bands after weapons like 'Guns N' Roses' because of what they symbolise. America had no violent tradition, it had to invent its own and Hollywood was the first medium by which this new America was assimilated. The image of good and evil values were translated into the heroes of the 'Big screen', the hero was the one with the power i.e. the one with the gun.

(Fig 23)



Fig (23) Lara Croft in Tomb Raider video game.

The 'home-defence' market has been influenced by the police revolver market also and Smith & Wesson have captivated over 90 percent of that market.

It wasn't until an Austrian Industrialist and innovator named Gaston Glock did intensive marketing, that the traditional 'mans gun' image was weakened. In 1983 he produced a 9-mm pistol consisting of a steel barrel and slide on a high-impact polymer frame. This was the Glock 17, consisting of only 33 parts, it was easy to use and maintain. The Glock 17 won the Austrian Army pistol trials and has become the weapon of choice in the US police forces since the 1990s. The advantages of the Glock were the greater magazine capacity and a passive safety, activated by pulling the trigger rather than a separate catch.

The plastic feel and characterless form did nothing to deter the consumer market and Police soared. This means that Glock had passed the first test that it looked like a 'gun' and its form has become the fashion. Before the polymers of Glock and SIG, the John Browning P_35 high power pistol of 1935 was the most advanced trigger mechanism. The Austrians and Germans are now the gunsmiths to the world, with the sub-machine gun, automatic pistol, assault rifle and most recently the caseless cartridge to their credit.

"Gun style is an elusive quality, a complex interplay between utility and fantasy, between expectation and innovation".

(Owen, William 'I.D Magazine' p.57 Sept/Oct 1996)

Uzi Gal provided the current utilitarian weapon, the 'Uzi'. It's a modern-day icon of man's conquest over his physical limitations and socio-political frustrations in the world of Hollywood.

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"Guns are as an elastic quality, a complex interplay between utility and fantasy, between expectation and innovation."
(Guns, William K.D. Magazine, p. 31 Sept/Oct 1990)

Uzi Gal provided the current urban weapon, the Uzi. It's a modern-day icon of man's conquest over his physical limitations and socio-political frustration in the world of Hollywood.

Filmmakers, drug dealers, secret policemen adore this weapon because of its rapid rate of fire, its boxy shape and the handgrip and magazine located at the centre of gravity. This allowed a person using 'one hand' to create a frenzy of bullet spraying prosthesis, with little control of direction. This re-creates man as a superhero, and icon of power and random terror. This dominating power is found not only in TV's role models but also in video games. The game gains its popularity by the amount of firepower it contains. The objective of these shoot-em-ups is to destroy and kill all obstacles, which might prevent you and your war-like hero from sitting on the throne of ultimate supremacy. The gun was entirely functional, no aesthetics and very little ergonomics reflect the recognition that it's acceptable to display your weaponry in the open. Therefore adding an element of intimidation.

Austria and the Steyr-Mannlicher factory produced the 5.56mm AUG (Armee Universal Gewehr), a weapon which looked like no other gun the world had ever seen before. (fig39)



FIG (39) 'The Steyr AUG'

The various parts were interchangeable because it was built into a plastic casing. The barrel was available in four lengths and weights so that it could be put together as a sub-machine gun, a carbine, a rifle or a light machine gun. Eventhough it's not a handgun its design and styling are very influential to the development of the modern handgun. The main

Finlanders, drug dealers, Soviet policemen adore this weapon because of its rapid rate of fire, its boxy shape and the handgun and magazine located in the centre of gravity. It is allowed a person using "one hand" to become a proxy of robot springing prostheses, with little control of direction. This is creates man as a superhero, and icon of power and random terror. This dominating power is found not only in Vektor's models but also in video games. The game gives its popularity by the amount of firepower it contains. The objective of these shoot-em-ups is to destroy and kill all obstacles which might prevent you and your war-like hero from sitting on the throne of ultimate supremacy. The gun was entirely the result of aesthetics and very little ergonomics. I felt the recognition that it's acceptable to display your weaponry in the open. Therefore adding an element of intimidation.

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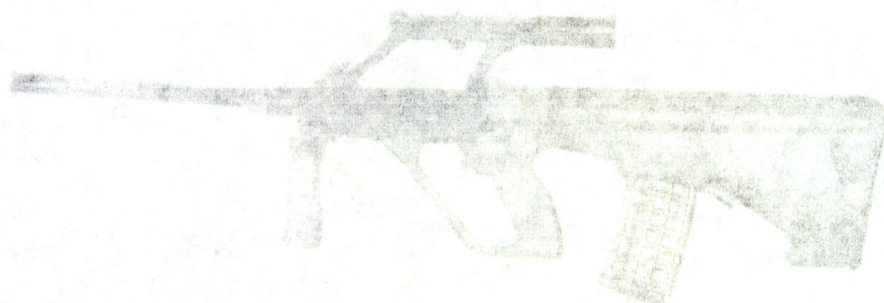


FIG. 70 The Steyr AUG

The various parts were interchangeable because it was built into a plastic frame. The barrel was available in four lengths and weights so that it could be put together as a sub-machine gun, a carbine, a rifle or a light machine gun. Even though it's not a handgun its design and styling are very influential to the development of the modern handgun. The main

reason the weapon was noticed was the enveloping plastic body. Heckler & Koch used the same system, which allowed movement to take place inside the body, and it protected the interior from dirt or dust. They were developing the caseless cartridge. (Fig40)

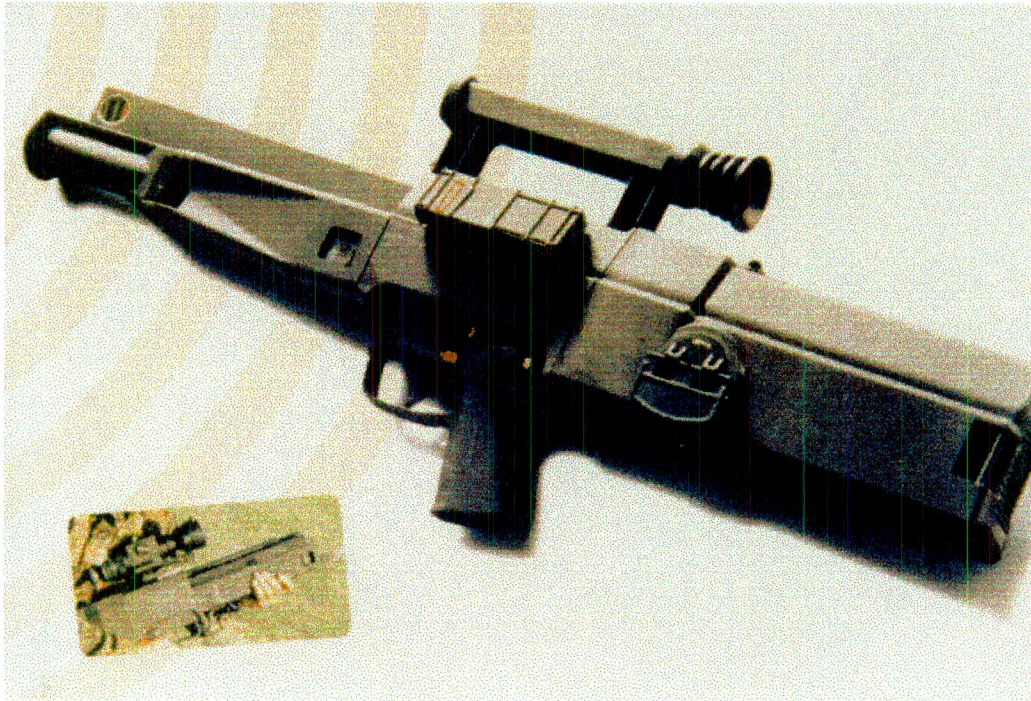


Fig (40) 'H&K's G11 caseless cartridge rifle'

The advantages of a caseless cartridge were; it was lighter so more ammunition could be carried and reloading could commence immediately because there was no case to be extracted. The actual rate of fire was about 2,200 rounds per minute. There was a problem, called cooking-off occurring, which was the firing itself by the influence of the heat of the chamber igniting the propellant. A de-natured high explosive compound was designed which had a temperature of about 100 degrees C higher than that of nitro-cellulose the original cartridge. It is military design and research of firearms that is most active at present, and this technology is being applied to handguns.

Anti-terrorism is becoming quite sophisticated these days. The best current example is the .224 Boz. It is for military and Police only and can

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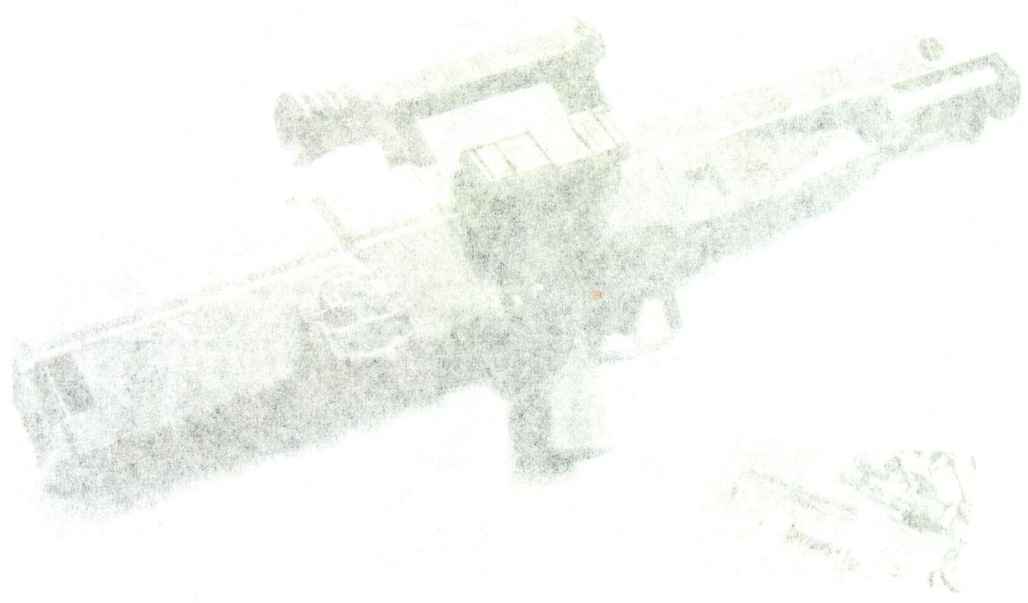


Fig (40) H&K's G11 cassette rifle

The advantages of a cassette cartridge were it was lighter so more
 ammunition could be carried and reloading could commence immediately
 because there was no need to be ejected. The actual rate of fire was
 about 200 rounds per minute. There was a problem called 'cook-off'
 occurring which was the firing itself by the influence of the heat of the
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 being applied to handguns.

Anti-terrorism is becoming quite sophisticated these days. The best
 current example is the S&W Box. It is for military and Police only and can

penetrate 10% ballistic gelatin at a temperature of 41 degrees centigrade more than 21 with a four-inch-wide cavity that's five to 16 inches deep. It is claimed to be the best pistol round available for anti-terrorist work. It can shoot through both sides of, the old-style U.S steel 'pot' helmet and the current Kevlar helmet. Instead of a laser sight which uses batteries, you can now obtain a fibre-optic light-pipe sight. The new Walters P99 is now available in .40 S&W and like the 9mm version features rails for flash lights and/or laser sights, interchangeable backstraps to tailor the grip to your individual idiosyncrasies and instantly replaceable front-sight blades for elevation adjustments. The new Steyr M40 from GSI, has a 10 shot polymer-framed auto in .40 S&W that weighs a scanty 28 ounces. Gas operation is being more extensively researched. It is however more complex, requiring a gas piston and heavy spring to control blowback. Gas operated pistols are usually bulky, best suited to very powerful calibres, but use a fixed barrel, which enhances accuracy. A radical innovation in design has come from the California Instrument Co., which produces the Calico carbine and assault pistol range. Originally made as the M-100P in .22 LR, the Calico model M-900P pistol is available in 9mm Luger. What sets the Calico apart is the magazine design, which is helical and sits on top of the weapons receiver rather than below or to one side. The helical magazine, a cross between a drum and a tubular magazine, packs a vast amount of ammunition into a small space. Magazine options are for 50 or 100 rounds capacity of 9mm Luger cartridges. Space-age materials are used to keep weight down; the receiver is high tensile 356/T6 aircraft aluminium alloy. The action of the M-900P is roller-locked retarded blow-back, which means that a lightweight bolt can be used. The stock and grip is made from very strong, glass-filled polymer resin, as are the magazine housings, giving the pistol an unloaded weight of only 21/4 (just over 1kg). Loaded with

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50 rounds, the 14ins long, six ins-barrelled Calico M-900P pistol weighs just 2oz (60g) more than an unloaded .357 Magnum Desert Eagle pistol, which has a magazine capacity of only nine rounds. Loaded with 100 rounds, the weight of the M-900P increases to just under 6lbs (2.65kg) and the length becomes 19ins (483mm). Advances in technology i.e. production technology such as better moulding and casting facilities are contributing to the design and style of the handgun. Take the Smith & Wesson Airlite Ti for example, they have produced a revolver that is as strong as stainless steel, but weighs forty percent less (11.4 ounces). Smith and Wesson are the first handgun manufacturer to succeed in building a revolver whose major components are manufactured from titanium. The main frame is made from aluminium and the revolving cylinder is made from titanium. (Fig41)



Fig (41) 'Smith & Wesson Airlite Ti'

50 round the 14ins long six-barrelled Calico 41-9000 pistol weighs just 20x (50g) more than an 11.5in 357 Magnum Desert Eagle pistol which has a magazine capacity of only nine rounds. Loaded with 500 rounds the weight of the 41-9000 increases to just under 6lbs (2.6kg) and the length between 19ins to 33ins. Advances in technology and production techniques such as better moulding and casting facilities are contributing to the design and style of the handgun. Take the Smith & Wesson Airline II for example. They have produced a revolver that is as strong as stainless steel but weighs forty percent less (11.4 ounces). Smith and Wesson are the first handgun manufacturer to succeed in building a revolver whose major components are manufactured from titanium. The main frame is made from aluminium and the revolving cylinder is made from titanium (Fig 1).



Fig 1: Smith & Wesson Airline II

Like the Styer AUG handgun design is becoming more modular, the main reason for this seems to be reducing manufacturing costs. The new Multi-slide Combo Gun is the latest technology to surface. (Fig42)



Fig (42) 'Multi-slide Combo Gun'

EAA technologies have come up with a pistol, which has interchangeable magazine sizes and barrel lengths.

Like the SIG-AUG handgun design is becoming more modular, the main reason for this seems to be reducing manufacturing costs. The new Multi-Slide Combo Gun is the latest technology to surface (Fig. 12).



Fig. 12. Multi-Slide Combo Gun.

1.7.4 technologies have come on with a pistol, which has interchangeable magazine sizes and barrel lengths.

Conclusion

The handgun has gone through many developments since its introduction in the Fourteenth Century. Changing the course of History, as we know it. Without the developments of the gun society as we know it would be very different.

Like all industry, technology is replacing human beings, on the battlefield it is no different. Despite all these technological changes which required an incredible amount of creativity, the ultimate aim of the 'gun' was to destroy, quickly and effectively with the maximum of effect.

Every nuance of gas operation, recoil operation, cartridge and bullet design and propellant sighting technology has been studied inside and out, and is thoroughly understood. There is no way that any significant improvement can be made to the mechanical design of the gun, without an enormous expenditure of time and money and, most significantly some technological innovation which, at present cannot be imagined.

A collaboration of existing firearm accessories like range finders or laser sights incorporated into the one package could be an interesting prospect. The moral questions of the existence and need for weaponry will always pose problems and continue to entice debate.

There will always be huge investments and experimentation in gun technology while forces exist that seek to undermine law and order. However the question of state terrorism must also be addressed. While the image of the lone psychopath who opens fire on a crowd will always be a representative of anarchy, the more subversive element of state stockpiling and the development of sophisticated killing machines, in so-called official regimes is far more deadly.

Yet it is calmly accepted that there is a moral righteousness in protecting one's patch irrespective of the human cost.

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