

Small Arms Illustration

Kynan "kitwulfen" Andoetoe

I. The Four Rules

These four rules are the basis of safe firearms handling. Violation of any of the four rules can result in Bad Things™ happening, namely something getting shot that shouldn't be. Any character that is familiar with firearms will follow these rules religiously. If you are going to examine firearms for references, follow these rules.

1. All Firearms are always loaded.
 - Every firearm should always be treated as though it is loaded, even if you have verified that it is not.
2. Always keep firearms pointed in a safe direction.
 - Safe directions generally include: downrange, at the ground, in the air, and at the bad guys.
3. Keep your finger off the trigger until you are ready to shoot.
 - Your finger is the final safety that must be disengaged before shooting. Keeping it well clear of the trigger ensures that there will not be a negligent discharge.
4. Always be sure of your target and know what is beyond it.
 - If you're going to shoot, be certain of what you're shooting at and what you might hit if the bullet over-penetrates or misses.

II. Realism

Realism is often at odds with what might look the coolest in a picture. A character mowing people down with two SMGs on full auto might be visually interesting, but it fails to be realistic. If you want realism, then avoid the things on the list below. Unless, of course, the character has no idea what they're doing, then go ahead and chuck as many of these in there as you want.

- Dual-wielding firearms. It's all the rage these days, but it's simply impossible to focus on two sets of sights at once. Aimed, accurate fire is necessary to quickly and efficiently incapacitate Bad Guys.
- Gun fighters who use a pistol even when rifles are available. Pistols are defensive weapons, and should only be used to fight your way back to the rifle that you should have never put down in the first place.
- Anything you saw in Equilibrium. It looks cool, but "Gun Kata" is bullshit, and I will beat you if you mention it in my panel. Anything from Wanted, either. In fact, ignore anything coming out of Hollywood. It's probably nothing but lies.
- Full-auto fire. Full auto is only useful for suppression fire; as mentioned earlier, aimed, accurate fire is what will incapacitate the quickest.
- Firing from the hip, shooting "gangsta style," and other retarded ways of holding firearms. These are not conducive to aimed, accurate fire.

III. Using Pistols

1. The Modern Technique Grip
 - a. One-handed
 - Web of dominant hand is as high on the back strap as possible.
 - Middle finger of dominant hand is as high on the front strap as possible, pressed against the bottom of the trigger guard.
 - Thumb and index finger of dominant hand are in-line with the barrel, pointing at the target.
 - Pinky, ring, and middle fingers held close together.
 - The pad of the tip of the index finger of the dominant hand is used to squeeze the trigger.

b. Two-handed

- Dominant hand grips pistol as in one-handed grip.
- The heel of the off-hand is held against the grip of the pistol in the space between the heel of the dominant hand and the tips of the fingers of the dominant hand.
- The fingers of the off-hand are wrapped over the fingers of the dominant hand, with the index finger as high up against the trigger guard as possible.
- The thumb of the off-hand is held in-line with the barrel, beneath the thumb of the dominant hand.

2. The Isosceles Stance

- The elbows are locked, and the arms are held out from the body. When viewed from above, the arms and body form an isosceles triangle that points at the target.
- The dominant arm "pushes" while the off-hand arm "pulls," applying isometric tension to the handgun.

3. The Weaver Stance

- The Weaver Stance is the precursor to the Isosceles Stance and is used by some people who find it more natural or comfortable. Also, Isosceles is recommended for characters in body armor, as it presents the body armor to the threat in a more advantageous manner. Characters without body armor may be better off with Weaver, as it presents a smaller target.
- The Weaver stance mainly varies in that the body is not presented straight to the target, and the dominant hand elbow is locked and the off-hand elbow is bent at an obtuse angle.

IV. Using Rifles

1. Off-hand shooting

- The dominant arm is held close to the body in a vertical plane. Holding the arm out on a horizontal plane is called a "chicken wing," and is not recommended.
- The off-hand arm is held in a similar vertical plane, and is used to pull the firearm back into the shoulder as well as support the weight of the weapon. Gripping the magwell or a vertical foregrip can help.
- The shooter's off-hand leg is placed ahead of the dominant leg, with the majority of the weight placed on the off-hand leg. The shooter should lean into the rifle, as this helps counter-act recoil.

2. Prone Shooting

- The shooter is supported mainly by his elbows, dominant hip, and off-hand knee. This position raises his chest and abdomen off from the ground, and helps eliminate unintentional movement from breathing.
- The off-hand leg is bent, while the dominant leg is straight.
- The arms support the weight of the body, as well as the weight of the rifle.
- The rifle is otherwise gripped similarly to how it is gripped in the off-hand stance.
- For supported shooting (such as when shooting from a rest or bipod), the off-hand arm will often support and stabilize the buttstock.
- For bench shooting, the shooter sits at a bench but otherwise grips the rifle as he would for prone or supported prone shooting.

V. Drawing With References

This section should help with the task of actually drawing the firearms.

1. Reference Photos

- www.ar15.com/forums. The AR15.com (colloquially, "ARFCOM") forum is the largest firearms forum on the web. They have many threads where members post pictures of their personal weapons. If you can't find a picture of a firearm that you want to draw, try asking on the forums for some reference photos. Someone might be able to help you out.
- world.guns.ru. I don't tend to use this so much, but many people find it to be a good resource for reference photos.
- Manufacturer Websites (Bushmaster, Colt, Glock, Kimber, Springfield Armory, FN Herstal, Troy Industries, LaRue Tactical, Magpul, Noveske, etc...).

2. Straight Edge/Ruler

- You will look silly if the lines that should be straight are not straight. Having seen more than one artist draw a pistol that has a definite bow curve in a piece of metal that should be straight, I feel the need to put this line in here. I, personally, use a see-through ruler with gridded markings on it. It helps with drawing parallel lines.

3. Determining Scale

- The most apparent aspect of a firearm that can be used for scale is the weapon's grip. The size of the trigger, trigger guard, and trigger well is very similar on many firearms, and can be used to determine the size of the grip. Once you have a good idea of how large the grip is, you can find out how large the firearm is compared to the grip. With this in mind, you can keep the firearm to scale to itself as well as keeping it to scale with the character wielding it.
- A slightly more advanced (and somewhat more precise) method of determining the size of the weapon is to use the length of the barrel instead of the size of the grip. The length of a barrel is usually measured with a wooden dowel inserted into the barrel while the bolt is closed, resulting in a measurement from the bolt face to the muzzle. Any muzzle attachments (flash suppressors, muzzle brakes) that can be removed are removed when the barrel is measured. With a knowledge of how long the barrel is (usually listed on the manufacturer website) and how the barrel is measured, you can determine the length of the barrel in relation to the rest of the firearm; this is even easier if the overall length is also listed. Assuming you have a good idea of how large an inch is in your drawings, you will be able to much more accurately size the firearm as you draw it as well as more accurately place the physical features of the weapon.

4. Getting Down To Business

- Much like drawing figures, it's best to start out with a rough shape when drawing firearms, and refine it down until it is finished. A pistol might be started off with two rectangular prisms that meet at an angle. A rifle might be a collection of cylinders and rectangles.
- Make sure you draw an appropriate level of detail for your style. The firearm will look out of place if it's hyper-detailed, and the rest of your drawing is in a fairly cartoon-ish style. Accuracy is important, but it's okay to leave the little things out if they don't fit in with the rest of the picture.
- When colouring "black" firearms, start with a dark grey, and then shade down to black with appropriate highlights. Many firearms have fairly dull, dark finishes that are close to black and are not reflective like bare metal. Of course, color firearms with a stainless finish as you would any other shiny metal.
- It can help to sketch a firearm from several angles before you try drawing it into the picture you are working on. Don't rush, take your time and do it right.
- Listen to what Beo and Strype tell you, and listen to what they say if they contradict me on this section.

VI. Inventing Your Own

Sometimes, there just isn't a firearm to fill your needs. In this instance, you might need to invent your own. It's important to understand the various parts of firearms that are integral to their operation. Beowulf and Strype will cover more unconventional or higher tech weaponry, but anything that is still a conventional firearm will likely share much with current designs. I won't go into too much detail of what each part does; just the fact that you know it should be there and what it should do is enough.

1. Inspiration

- Look at modern and cutting edge designs. Research them, and familiarize yourself with their strengths, weaknesses, and basic design. The XM8 Rifle, H&K G11 Rifle, and XM29 OICW are examples of some interesting, yet ultimately failed, weapons. Creating your own, viable version of these weapons can give you a "near future" firearm with a firm grounding in reality. Magpul, a design group and weapons manufacturing company, is a very innovative company with their hand in several interesting products. From their own PDR (think P90, but in a useful caliber), Masada (currently set to be produced by Bushmaster as the ACR), Massoud (a larger version of the Masada that is currently in development), and the FMG-9 (a folding machine pistol based on the Glock 18) to the TDI Kriss, that they helped design. Understanding the current environment of firearms design will help you predict which direction you might go with your designs.

2. Parts is Parts

- Below is a diagram of a fictional pistol (though based on the 1911). The parts listed should be present on any fictional firearm that you design, with the exception of the accessory rail and the hammer (some firearms use a striker instead of a hammer, or have internal hammers). The main difference between the list of parts presented here and those on a rifle are the rifle will have a receiver instead of a frame, a bolt/bolt carrier instead of a slide, and will also have a buttstock and foregrip.

