An Insider's Story....
How I Acquired a New AK-47 -
And You Can Too...

How to Obtain a Working AK-47 in the Next 24 Hours GUARANTEED!

What would you say if I could GUARANTEE that YOU would own a working AK-47 within 24 hours of reading this?

Sound Unbelievable?

Here's the truth - It's easier than you think to acquire your own AK-47, and I am going to *prove* it to you.

Listen - I didn't believe it either, until I learned about secret new discovery that everyone is talking about - something straight from the mind of a young American inventor - something that guarantees you will be armed with a semi-automatic 9mm AK-47 in less that 24 hours!

Read on to learn the true story of an amazing new discovery

By Jack Benteen,
Contributing Writer,
Small Arms Review Magazine

Dear Friend,

Never in my life have I been so excited about a new discovery as I am today. I urge you to lock the door, take the phone off the hook, kick off your shoes, get comfortable, and STUDY this letter -- it IS that important! It introduces something THAT revolutionary! My guess is that this new discovery will change you life just as it has mine.

From this moment on, forget everything you've ever read or been told about guns, the military or firearms in general - because what I am about to reveal to you will amaze even the most experienced firearms expert.

Who ever heard of an ordinary person like me obtaining an AK-47 in less than the time it takes for the sun to rise in the east and set in the west? After all, there are waiting periods...forms to fill out...government red tape...and that's assuming you live in a place where AK-47's are for sale at all! For most people living on plant Earth, an AK-47 is strictly prohibited, and cannot be obtained at any price....

Yet that's what happened to me. And the methods I used to obtain my AK-47 can be applied by almost anybody, almost anywhere.

Maybe you'd like to obtain an AK-47 because you're a collector, or because you enjoy shooting for fun. Maybe you need a reliable firearm to protect yourself or your loved ones, and you can't, for whatever reason, purchase it

on the open market. Or maybe you'd just like to own a piece of history.

Listen, we all know the AK-47 has become the world's most prolific and effective combat weapon; a device so cheap and simple that it can be bought in many countries for less than the cost of a live chicken. Depicted on the flag and currency of several countries, waved by guerrillas and rebels everywhere, the AK is the firearm of choice for at least 50 legitimate standing armies and countless fighting forces from Africa and the Middle East to Central America and Los Angeles. It has become a cultural icon.

Can You Keep a Secret?

While you may be able to recognize an AK-47 whenever you see one, I'm willing to bet you don't know a dirty little secret about the AK-47...Something those govenment busy-bodies don't want you to know about...Something nobody has been willing to reveal until now...

To be honest, I couldn't believe this secret when I first heard it, either.

I'm going to tell you this...but you gotta keep it to yourself...

Ready? OK - here's the secret...By this time tomorrow you can own a semiautomatic AK-47 in 9mm caliber - but you are going to have to make it yourself. Does that sound difficult? Well stay with me, because I want to share a new discovery with you that will RADICALLY simplify the manufacture process....It's so easy, ANYBODY can do it!

Yep...you heard

that right....It's faster, cheaper and easier to ***make*** an AK-47 than it is to buy one....even in a country like the United States, where the semi-automatic AK-47 is bought and sold openly!

There Must Be a Catch To It!

Right now, it would be understandable if you were sputtering "But - but - it's not that simple. There must be a catch to it!"

Of course there's a catch to it. There are hundreds of "catches" - hundreds of pitfalls and traps for the unwary who have never traveled what I call "the reality road to responsible firearms ownership".

But I made it, learning from an expert - the same one you can learn from, if you want to. And you have a priceless advantage this young inventor never had - the advantage of being able to know beforehand everything he had to learn by trial and error.

And He Makes It So Simple!

Whether you are a complete novice or a person with limited firearms experience, this is the article you have been waiting for!

Here's why...

It begins with the assumption that you know nothing about firearms. None of the terminology. Nothing.

Every lesson....every step...is explained in plain English. There's no confusing jargon. No technical language.

Every step is sequential. You simply can't make

a mistake because every step is self-correcting.

☑ It's easy! And it's fun! You'll be amazed at how quickly you're learning.

☑ You'll be able to print this article on standard 8.5"x11" pages. The templates and blueprints are all to scale - you simply need to "peel and stick" the templates using scissors to cut them out and Elmers glue to paste them to your sheet metal pieces.

☑ Everything is fully illustrated with drawings and photographs. So you not only read - you actually see - each step.

☑ You'll learn how to navigate through the build process just like a pro....master basic terminology....create and form each piece and part....even if this is the very first firearm you have ever created!

☑ You'll be able to recognize all of the parts of your AK-47....know how each part functions..... and how to repair your firearm if the need ever arises.

☑ You'll understand how to create a 30 round magazine...a critical step most builders overlook.

☑ You'll discover a simple, easy way to make a barrel from scratch.

☑ You'll discover how to fabricate the all-important and critical fire control group, (FCG); one that will function reliably for years to come.

☑ You'll learn a secret way to test your new creation - one that will

keep you safe and ensure your AK is ready for you to use.

☑ And so much more!

Here are Some Comments From a Few Owner-Builders:

"....this article is GREAT! Why can't those other books make their instructions one tenth as good as your article?" ***Frank Gorshak, New Mexico U.S.A.***

"...a lot better than those 'builder' websites, and a whale of a lot easier to understand, too. I learned the entire process and had my AK-47 completed in under 24 hours." ***George Roddy, United Kingdom***

"...I'm a homemaker and a Grandma. I built my AK-47 for self defense because of the neighborhood I live in. Now I'm confident, and not scared to be in my own home. You made it so easy." ***Margaret Hunter, Ohio, U.S.A.***

This article is literally the product of a lifetime, into which the inventor has poured every distilled ounce of practical knowledge he has gained along the road to owning a new AK-47.

Let's be clear on one point: Information and ideas are fine, but now it's time to bridge the gap to implementation. In the following document he has made implementation an 80% "no-brainer", because

he's done 80% of the work for you.

Scroll down and read the details at no risk! See how you can apply the same, little-known, new discovery and make your own AK-47...in less than 24 hours!

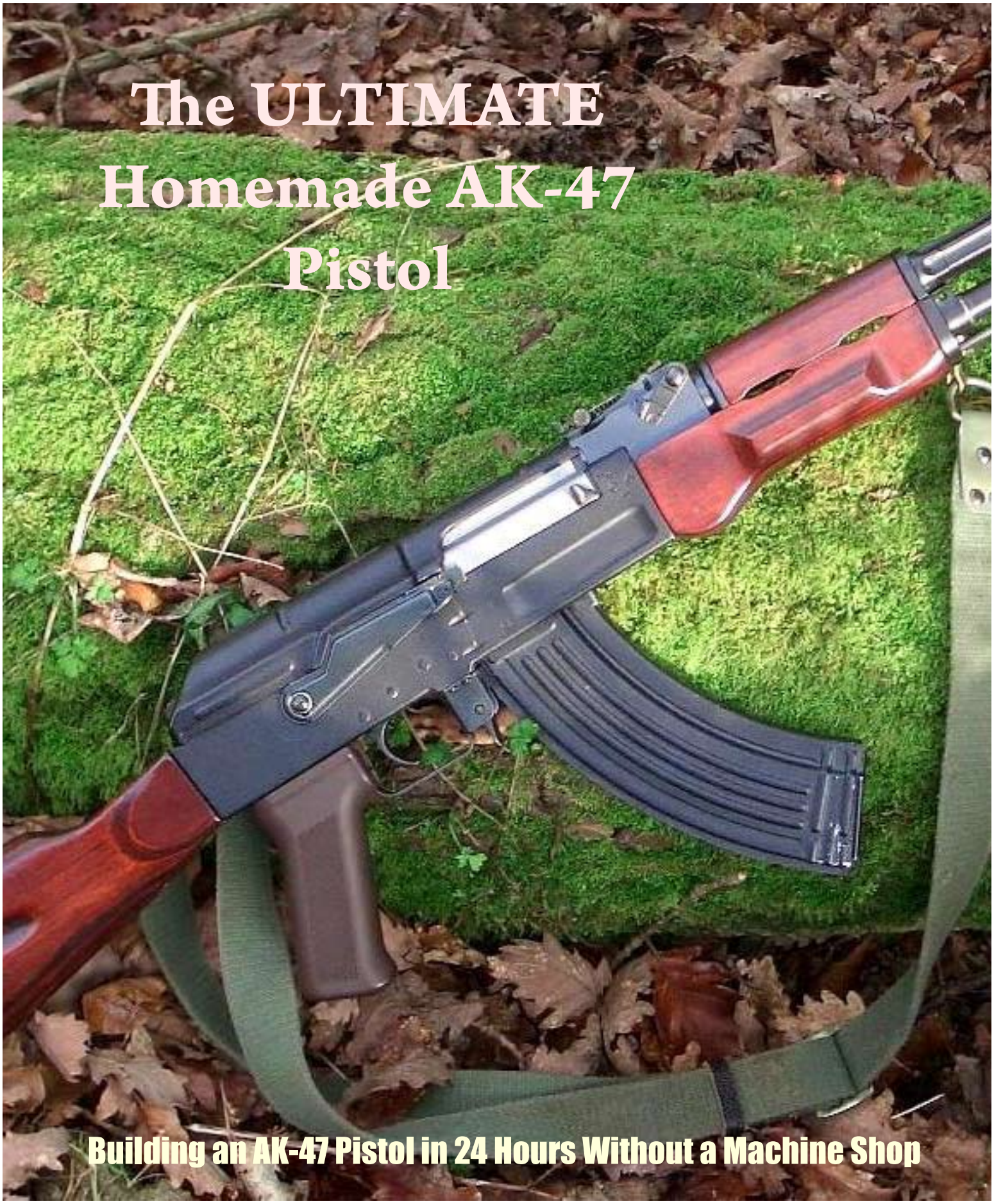
I promise extraordinary success at blinding speed. Do it today! If you act quickly, you can put these procedures to work for YOU now, on a zero risk basis.

I urge you to act on this opportunity today, right now, while it is fresh in your mind.

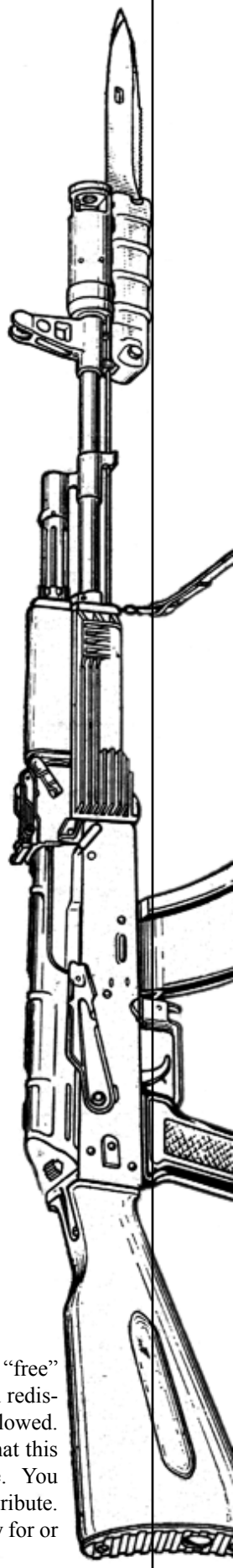
Sincerely,

Jack Benteen
Contributing Writer
The Small Arms Review Magazine

P.S. Now it's time to put my promises to the test. Scroll to the next page, and get ready to take action!


The ULTIMATE
Homemade AK-47
Pistol
Building an AK-47 Pistol in 24 Hours Without a Machine Shop

CONTENTS.



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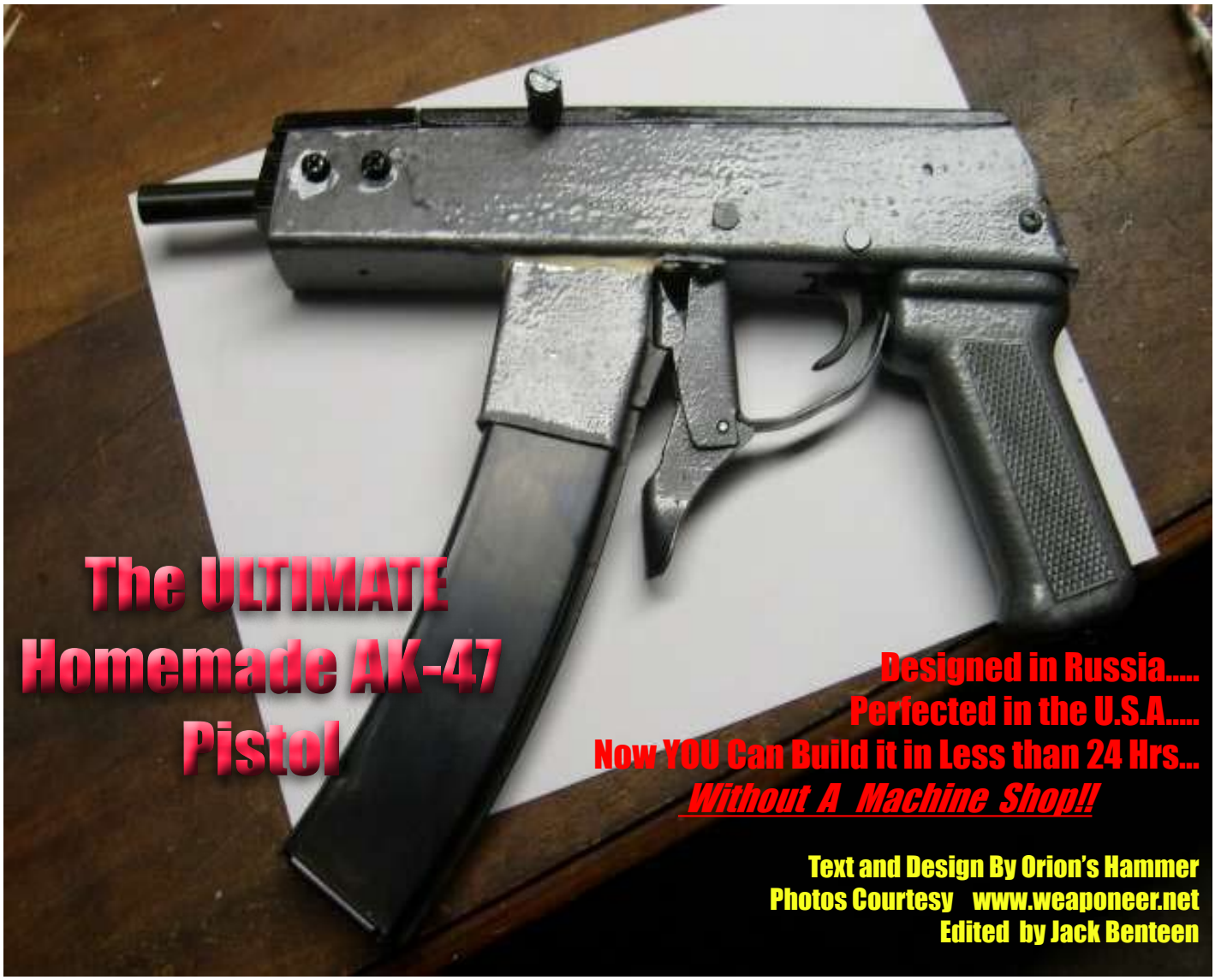


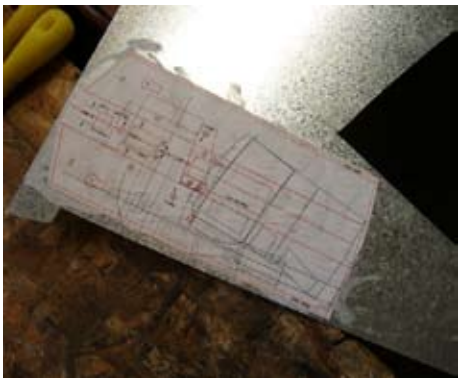
Most importantly, this AK-47 pistol can be produced quickly - typically in just a few hours. No advanced skills are necessary - you need only be able to follow simple, step by step instructions and you will quickly be the proud owner of a new AK-47 9mm pistol....

It was in April of 2008 when a good friend emailed me about a new post at weaponeer.net called 'blowbAKpistol'.

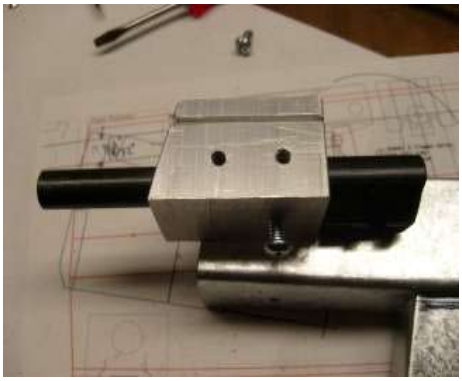
The internet forum post was started by an individual who called himself "Orions Hammer" and the post detailed what many have come to know as the ultimate homemade pistol. Chambered in 9mm, this design represents a giant leap forward for home firearm builders and for those interested in making their own firearms in the privacy of their own home.

Why?

Well - there are quite



The build process for the AK-47 pistol represents sheer genius in it's simplicity. The builder need only print the blueprints and glue them to sheet metal using ordinary Elmers glue, (top left), then the individual pieces can be cut using tin snips, (top center) and bent into shape, (top right). The bolt is not milled or turned on a lathe, but instead is fabricated using ordinary pieces of steel bar stock, (bottom left); barrel is mounted in a piece of aluminum stock, (bottom center) and the whole weapon is assembled into a sheet metal receiver, (lower right)....



a few reasons, really, but the biggest is that this brilliant pistol design sidesteps the one main problem that has plagued nearly every single homemade firearm to-date. That is, the need for the firearm builder to own, and be skilled in the use of a verticle milling machine, and a metal lathe. Most people who are interested in home-built or homemade firearms, (HMF), are not skilled machinists, and of those who are, even fewer are afforded access to these expensive tools outside of work or some professional pursuit. Thus, the ready pool of those who want to build their own firearm, and those who actually are able to create a HMF are very, very few. The AK-47 pistol designed by Orions Hammer is unique in that it requires no milled or turned parts. Instead, each part of the pistol can be produced by readily available tools, and most can be created by bending small, indivdual pieces of sheet metal.

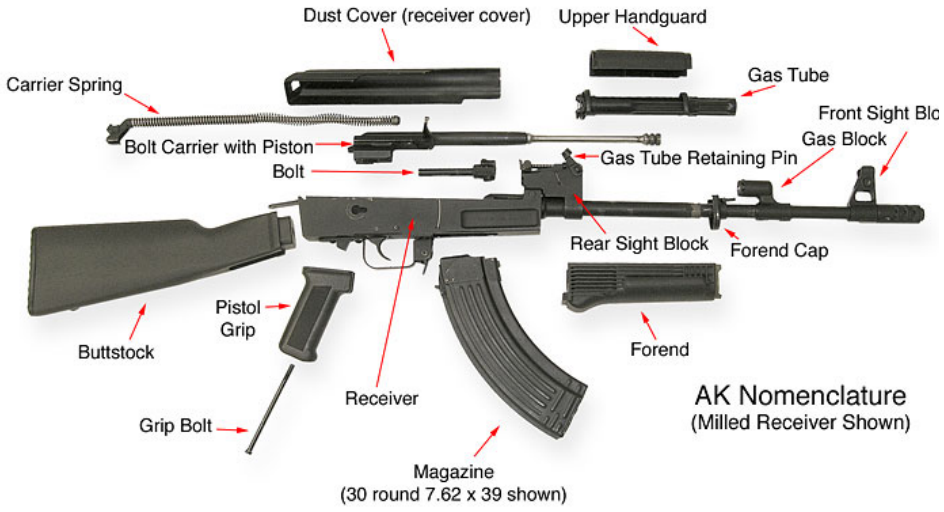
Most importantly, the pistol can be produced quickly - typically a finished pistol can be completed in just a few hours.

No advanced skills are necessary - you need only be able to follow simple, step by step instructions and you will quickly be the proud owner of a new AK-47 9mm pistol.

Rather than gushing on and on about this particular design, let's jump in and examine the specifics of each component, and see exactly how Orion's Hammer created such a brilliant pistol design.

What I am going to do in this article is to summarize, step by step, each of the procedures and methods that Orion's Hammer used to create his amazing AK-47 pistol.

What follows is Orion Hammer's original instructions, in his original words. Now, his original design is for an AK-47 pistol that is chambered in .22 caliber, and a second design that is chambered in 7.62x25 Tokarev - if you don't know what 7.62x25 Tokarev is, don't worry. At the end of his description we will be discussing how to fabricated the AK-47 pistol in a more ordinary caliber - 9mm to be exact.



Before we go too much further, let's make sure you know what each of the bits and pieces are called. Here is a picture of the basic AK-47 rifle, disassembled. While the Orion AK-47 may look a little different, the various bits and pieces all have the same names. If you get confused as you read at the instructions, refer back to this diagram, and things be clearer.





The AK-47 is one of the most verstaile weapon platforms on the planet. In the 60+ years since it's invention, it has been adapted as a shotgun, (Saiga shotgun pictured far left), a short barrel rifle (middle), a pistol (upper right is an AK-47 rifle-caliber-pistol) and a 9mm caliber pistol, (lower right). It's also used by people all over the world. Because it is so easy to use, the AK-47 is the perfect machine for those without a background in shooting. Little or no experience is necessary to successfully operate an AK-47.





Once again, the classic AK-47 in 7.62x39 caliber. This image illustrates where the basic parts are located on the rifle, and how it should look when it is assembled.

Before we start, just for clarity, I am going to reprint the materials list for the pistol, so you know exactly what to shop for when you attempt your own build:

Materials:

-AK-47 hammer, trigger, disconnector, Fire Control Group pins, and pistol grip. Imported parts are legal in pistols, so anybody that builds AKs probably has spares lying around; or centerfire, (www.centerfire.com) sells ‘em for $10.

Speaking of legal, the AK-47 Fire Control Group, (FCG) has the “positive hammer disconnect” the Bureau of Alcohol, Tobacco and Firearms, (for those in the USA) requires for semi-autos.

**Note - If you cannot purchase the Fire Control Group, for whatever reason, I am going to discuss how to create these parts at the end of the article.

-Thin (like 1mm/.040”/20ga) sheet steel, for making the receiver. I used a piece of old galvanized sheet metal from a washing machine or something, and it works fine!

-Thicker (like 2mm/.070”/16ga) sheet steel, for making a magazine latch.

-Barrel and magazine. I used a cheapo Numrich 22 barrel and 10/22 magazines; but any non-rifle cartridge will work in blowback mode.

-1.25x2” aluminum solid rectangle bar, for making an AK-sized forward trunnion, to hold the barrel and front of magazine in place. I really prefer cutting and drilling aluminum, and it’s lighter than steel too!

-Steel bar stock, for making a bolt/bolt carrier.

-Music wire, for making springs (it’s amazingly easy to make springs!).

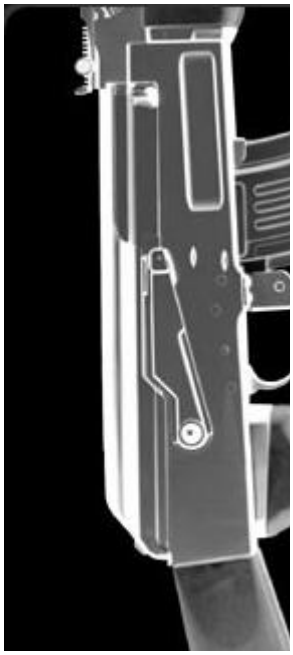
Tools:

-Hacksaw (or, far better, a metal-cutting bandsaw). A lot of stuff that looks milled can actually be made with a hacksaw!

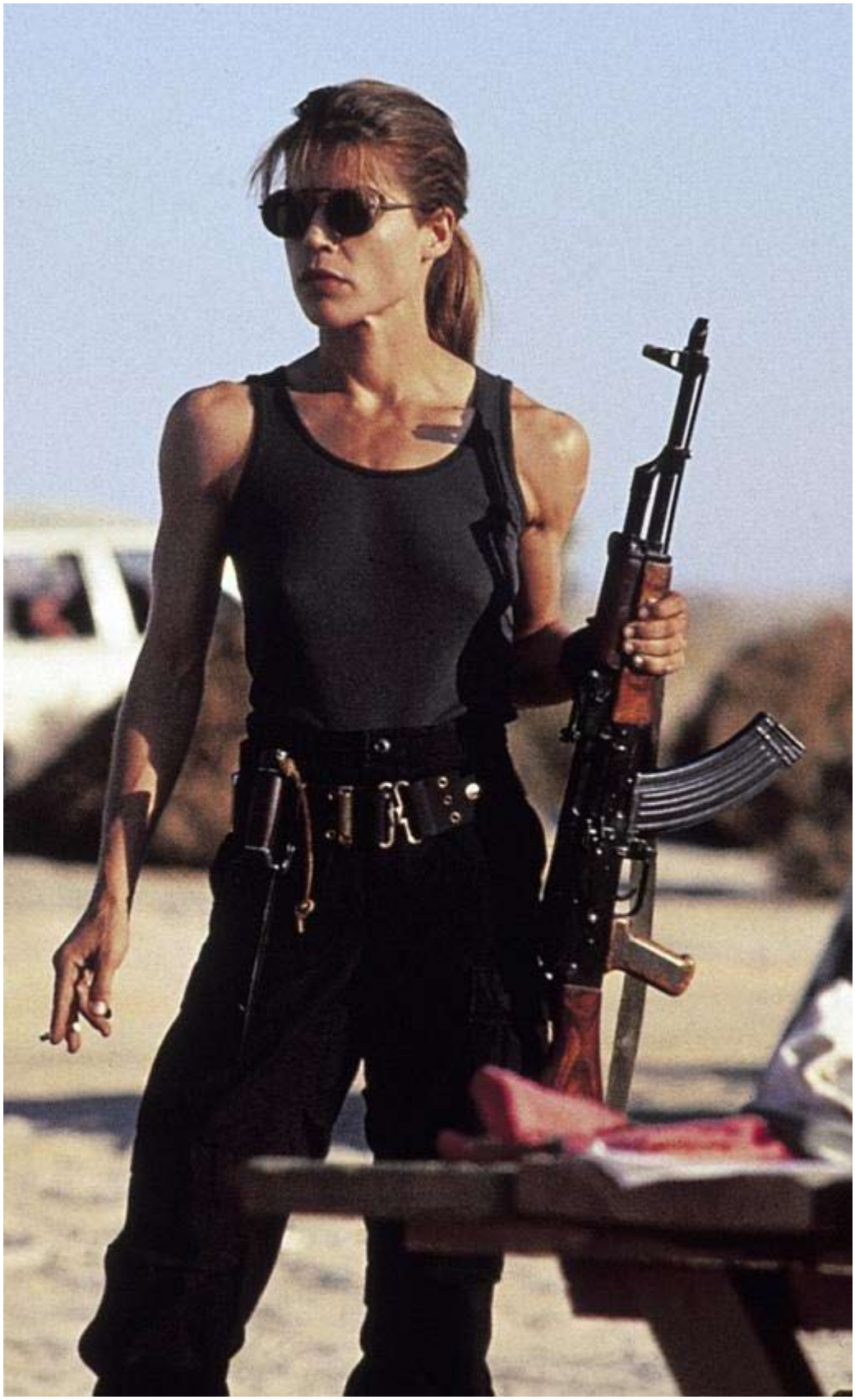
-Drill (or, far better, a small drill press).

-Bench vise.

-Thread taps, files, hammer, other small tools.



So, what makes an AK-47 a real AK-47? Really, the weapon comes in a variety of rifle and pistol calibers, including 9mm. The only thing that makes an AK a real AK is the receiver - or the mounting platform to which all parts are attached. Top photo is the Russian 9mm AK called the Gorda SCH-21, lower left is an unidentified AK 9mm SMG. In the lower right photo you can see the stock, grip, trigger and magazine are mounted on the classic AK-47 receiver.



You can try fighting the future with your AK - but I wouldn't recommend it. Linda Hamilton stars in the 1991 classic Terminator 2.
Photo courtesy Tri Star Pictures and 20th Century Fox.

Again - You WON'T Need:
A lathe.
A Welder.
A Milling Machine.
A Press, (As you would with any other AK-47 build)

OK - At this point I'm going to turn you over to Orion's Hammer and his description from his original post, in his own words. Get ready for one wild ride, and the BEST homemade firearm you will ever learn about.

Good luck - and I will see you again on the other side - *J.B.*

To create a Homemade-Firearm, (HMF) you typically need a milling machine, (above) to create the reciever, and a metal lathe, (below) to create the bolt. Neither of these machines are necessary to fabricate any part of the Orion AK-47.

Website: http://www.weaponeer.net/forum/forum_posts.asp?TID=6683&PN=1

Author: orions_hammer

Topic: Hammer's blowbAK pistol

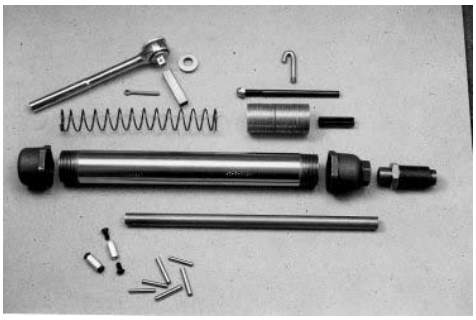
Date: March 06 2008 at 4:39am

Hi! I'm new here, but I've been lurking intently for the last few months. Jestism, you've created a beautiful thing with the Challenge!

I've been working on a very simple little design--a straight-blowback pistol built mostly from scratch but with a few leftover AK parts. Hence the name "blowbAK"!

Blowback designs are easier to scratch-build, because you don't have bolt lugs, complicated trunnions, gaspistons etc--the back of the cartridge acts like a piston to shove the bolt back and cycle the action.

I've built a little Skorpion-looking prototype in 22lr, feeding from



These photos illustrate the typical improvised submachine gun. The far left and top-middle photos are Chechen smg's, and the middle bottom photo illustrates many of the parts necessary to fabricate this weapon. In nearly every case, the bolt for this type of weapon must first be turned on a lathe, and then milled. A sten bolt, (far right) illustrates this - again, the Orion AK-47 totally eliminates the need for milled or lathe-turned parts. Photos courtesy of www.thehomegunsmith.com

10/22 magazines, and it fires! But my first build is just a bit too rough to cycle reliably with the 22's puny blowback force, so it's manually cycled right now.

I'm planning on doing a second build using PPSh mags in 7.62x25 before the contest deadline of April 1, though!

I'm trying to keep these things buildable with:

-Hacksaw (or, far better, a metal-cutting bandsaw). A lot of stuff that looks milled can actually be made with a hacksaw!

-Drill (or, far better, a small drill press)

-Bench vise

-Thread taps, files, hammer, other small tools.

No lathe (don't own one yet!), no welding (because I stink at welding!), and ideally no milling (if I can possibly avoid it).

Major parts press,bolt, or rivet together.

Pistol builds are a bit easier to keep US-legal, because both 922(r) (the imported-parts-count statute), and the NFA (National Firearms Act of 1932) barrel and overall length limits only apply to

rifles and shotguns. So when you replace your imported pistol grips, FCG parts, too-short barrels, etc with compliance parts on your rifle builds, you can then build pistols out of the leftover parts!

Materials:

-AK-47 hammer, trigger, disconnector, FCG pins, and pistol grip. Imported parts are legal in pistols, so anybody that builds AKs probably has spares lying around; or centerfire sells 'em for $10. Speaking of legal, the AK FCG has the "positive hammer disconnect" the ATF requires for semi-autos.

-Thin (like 1mm/.040"/20ga) sheet steel, for making the receiver. I used a piece of old galvanized sheet metal from a washing machine or something, and it works fine!

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-Steel bar stock, for making a bolt/bolt carrier.

-Music wire, for making springs (it's amazingly easy to make springs!)

The Orion AK is a 9mm pistol version of the AK-47. Lest you believe that 9mm is not a serious cartridge, or that it is not in common use with military firearms, consider the Colt M-16, (top) and the H&K UMP submachine gun, (right) and H&K MP5SD (bottom) - all in use by various militaries around the world, and all chambered in 9mm.

Overview of the build process:

1 - Form the receiver. I just modified an electronic AK receiver template, printed and glued it to the sheet metal, cut/drilled/filed the outline and holes, and bent up on an ordinary AK bending jig. You don't need lower rails, just the top rails. If you've done AK builds before, you're snoring already!

2 - Cut off a slab of aluminum for the forward trunnion. Measure and drill a hole for the barrel (you probably do want to measure this!), file the back of the trunnion to clear the front of your magazine, and slide in your barrel. The hot-trunnion cold-barrel trick works great here, and aluminum is good at galling up and grabbing steel barrels. Use a dremel cutoff wheel to make some room in the barrel/trunnion face for your extractor. Cut rail-slots in the trunnion with a hacksaw so you can slide it down your receiver, and bolt it in place.

3 - Bend up a trigger guard/magazine holder/ejector, and rivet into the receiver. You'll do final shaping later, but make sure an ordinary AK pistol grip fits on the back of your trigger guard!

4 - Fit a magazine latch into your trigger guard. This needs a spring, which you can turn by hand. Futz with the latch until magazines hang in the right place. Rivet the latch into the guard.

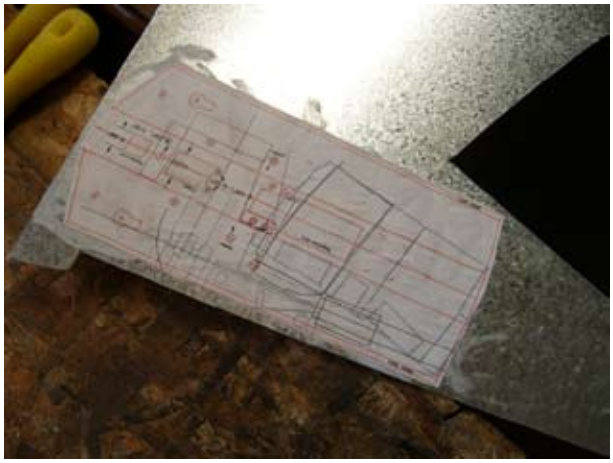
5 - Build the bolt. The bolt can be really simple! It needs slots in the sides to run along the receiver's top rails (hacksaw time!). It needs one dimensioned cut along the bottom to scoop rounds off the magazine. It needs a slot for an extractor, and a hole for the (floating) firing pin.

That's it! You're done!

Honestly, it's actually less frustrating fabricating new blowback parts than it is to demill an AK parts kit!

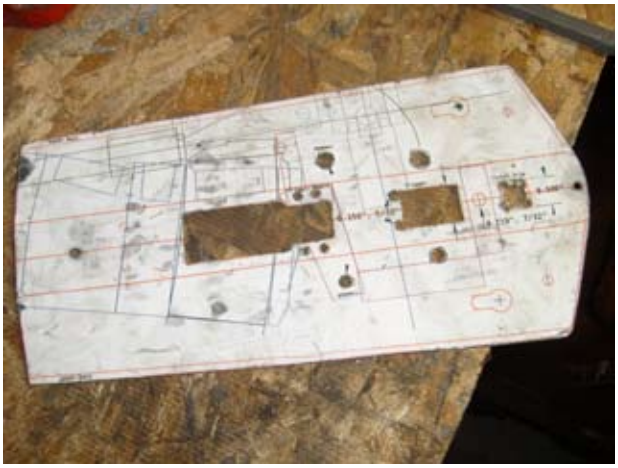
Let's Review that Overview with a few Illustrations:

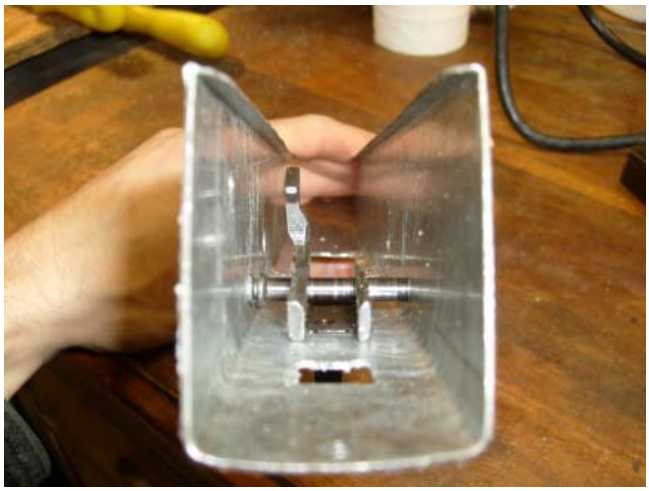
1 - Form the receiver. I just modified an electronic AK receiver template, printed and glued it to the sheet metal, cut/drilled/filed the ou tline and holes, and bent up on an ordinary AK bending jig. You don't need lower rails, just the top rails. If you've done AK builds before, you're snoring already!



Again - we start with a printed AK template, cut it out and glue it to sheet metal (left).

Next we cut/drill/file the outline and holes, (right).

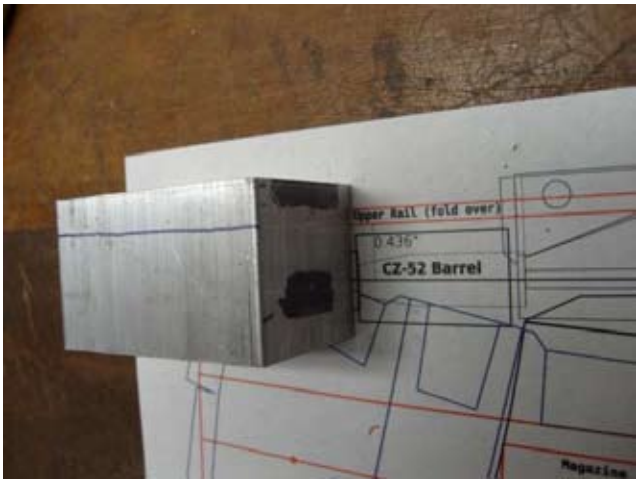




Finally we bend up the sides of the receiver as per the directions on the template. The bent top rails are also visible, just below the designer's fingers.

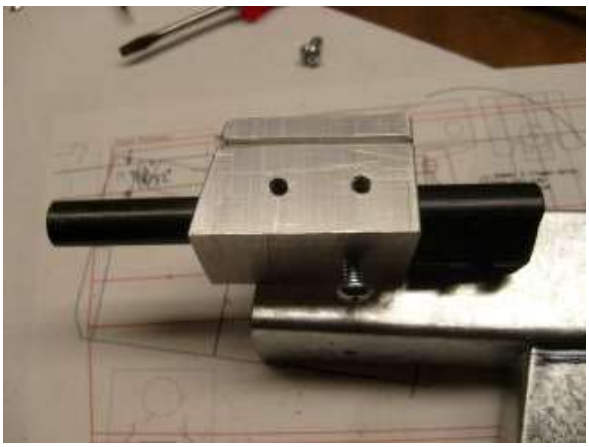
2 - Cut off a slab of aluminum for the forward trunnion. Measure and drill a hole for the barrel (you probably do want to measure this!), file the back of the trunnion to clear the front of your magazine, and slide in your barrel. The hot-trunnion cold-barrel trick works great here, and aluminum is good at galling up and grabbing steel barrels. Use a dremel cutoff wheel to make some room in the barrel/trunnion face for your extractor. Cut rail-slots in the trunnion with a hack-saw so you can slide it down your receiver, and bolt it in place.

To make a barrel trunnion, cut off a slab of aluminum as per the template and then measure and mark the rail-slots, (right). Rail slots can be cut with a hacksaw.



After the rail-slots have been cut, begin drilling a hole for the barrel, (left).

The completed barrel trunnion, (right), has both the rail-slots cut into the top of it, and the holes drilled in the side of it for secure mounting to the receiver. Barrel is also mounted in the trunnion, and the assembley is ready to be bolted into the receiver.



3 - Bend up a trigger guard/magazine holder/ejector, and rivet into the receiver. You'll do final shaping later, but make sure an ordinary AK pistol grip fits on the back of your trigger guard!

Just like the receiver, all smaller parts are made by cutting and pasting from the template. Pieces are then cut from sheet steel to form the trigger guard and magazine holder/ejector, (left).

The trigger guard, (right) will then need to be bent and formed as per the directions on the template.

Finally, the trigger guard will need to be attached to the receiver, (left). In this illustration, we see the receiver, (the very larg piece on top), the trigger guard attached bottom right, and just in front of the trigger guard is the magazine well.

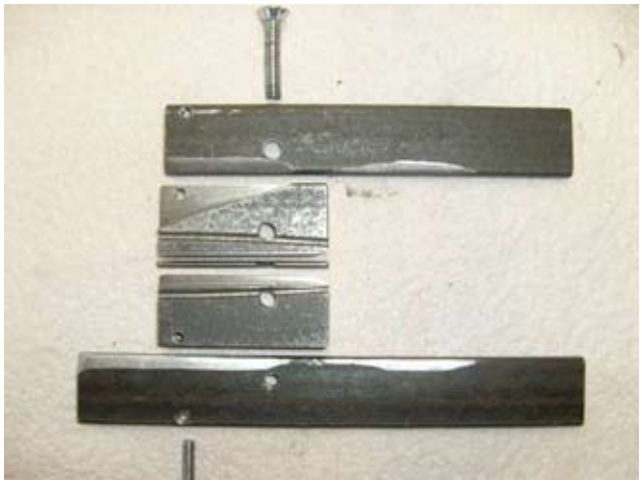
4 - Fit a magazine latch into your trigger guard. This needs a spring, which you can turn by hand. Futz with the latch until magazines hang in the right place. Rivet the latch into the guard.

Like each of the other parts, you simply need to bond the paper template to the sheet metal, cut out the part and bend it in place.

On the last page we created a trigger guard, and in this illustration you can see how the magazine latch will mount inside it. In this illustration you can see how the spring will be placed in the trigger guard.

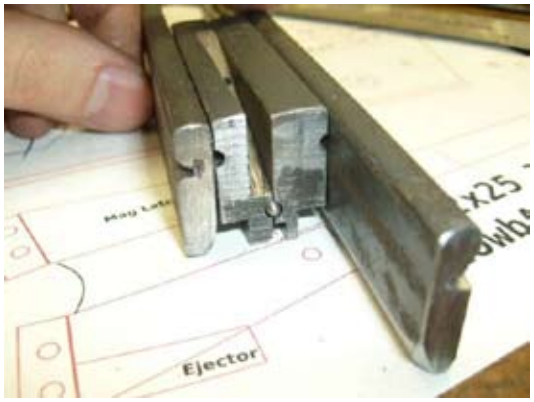
Here you can see the trigger guard, magazine well and magazine latch in the final placement positions for the pistol. Again, the objective of the magazine latch is to hold the box magazine in place.

5 - Build the bolt. The bolt can be really simple! It needs slots in the sides to run along the receiver's top rails (hacksaw time!). It needs one dimensioned cut along the bottom to scoop rounds off the magazine. It needs a slot for an extractor, and a hole for the (floating) firing pin.



So simple it's almost magic - (left) the laminted bolt is made of four pieces of mild steel. Each piece can be formed quickly with simple had tools; yet when bolted together, the bolt has enough mass to effectively hold the 9mm bullet in place, safely discharge the firearm, and then cycle a new bullet from the magazine into the barrel.

In this illustration, (right), you can see two things: First, how the firing pin is mounted in the firing-pin channel, and second, how the bolt is held together and reinforced with steel pins.



In this illustration, (left) we see a completely assembled bolt. On the exterior pieces you see the slots that enable the bolt to slide in the receiver's top rails. The cuts on the bottom enable the bolt to scoop rounds off the magazine and just above these cuts we see the tip of the firing pin.

Thank You Orion's Hammer!! It is difficult to over-state the importance of this single technological innovation. By developing this revolutionary, new laminated bolt in the way he has, Orion's Hammer has made it possible for you and I to create a new rifle or pistol within 24 hours, without a machine shop. Without this single technological innovation, all of the other steps in this document would be futile. If you have ever tried to create a bolt for a home made, or improvised firearm, you know that outside of this one design, you must have a lathe and milling machine. Orion's Hammer has solved this need in a simple, effective manner. Because he as generously provided this solution to all of us, free of charge, (yes, this single innovation is so revolutionary he could have locked it up with a patent), you and I are now able to create the firearm of our choice, without need of a mill or lathe.

Sheet Metal Gauges - Sheet Metal Sizes Made Easy

With the overview of the build process complete, you should have a general idea of how your AK-47 is going to come together. Before we progress into the individual, specific steps you will be taking to create your own AK, let's take a brief moment and talk about the sheet metal you will be using to create the reciever and other small parts. If you are not familiar with sheet metal sizes, much of this discussion may sound foreign, but it need not.

Sheet metal thickness is measured by gauge. A simple way to determine the gauge of a given piece of sheet metal is to use a sheet metal gauge. Starrett makes a precision US Standard Gauge for measuring the thickness of uncoated sheet, plate iron, and steel. Measurements are listed on one side with US standard gauge and the other with the decimal equivalents.

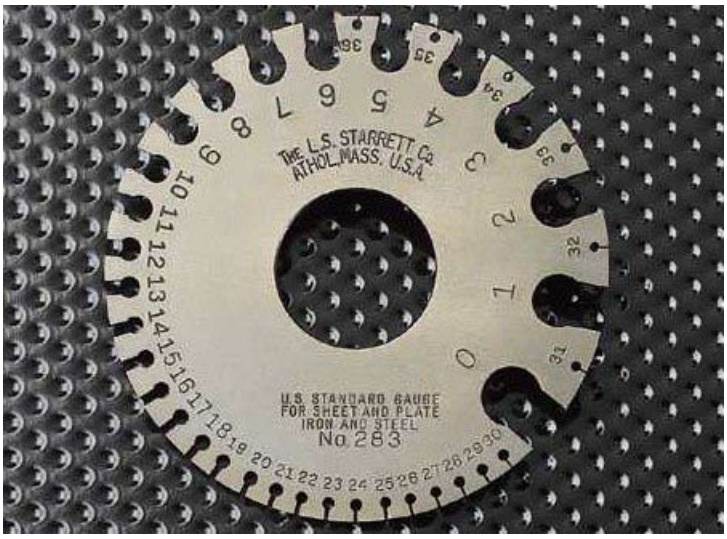
WIRE AND SHEET-METAL GAGES 425

Manufacturers' Standard Gage for Sheet Steel

Standard Gage No.	Equivalent Thickness, Inch	Standard Gage No.	Equivalent Thickness, Inch
3	0.2391	21	.0329
4	.2242	22	.0299
5	.2092	23	.0269
6	.1943	24	.0239
7	.1793	25	.0209
8	.1644	26	.0179
9	.1495	27	.0164
10	.1345	28	.0149
11	.1196	29	.0135
12	.1046	30	.0120
13	.0897	31	.0105
14	.0747	32	.0097
15	.0673	33	.0090
16	.0598	34	.0082
17	.0538	35	.0075
18	.0478	36	.0067
19	.0418	37	.0064
20	.0359	38	.0060

Gauges and inch equivalents can be quicly determined using the chart above. In the AK-47 designed by Orion's Hammer, we are using a 16 gauge sheet metal for the receiver, and a 10 gauge sheet metal for the magazine well. Again, by consulting the equivalent thickness chart above, you can quickly determine the imperial equivalent.

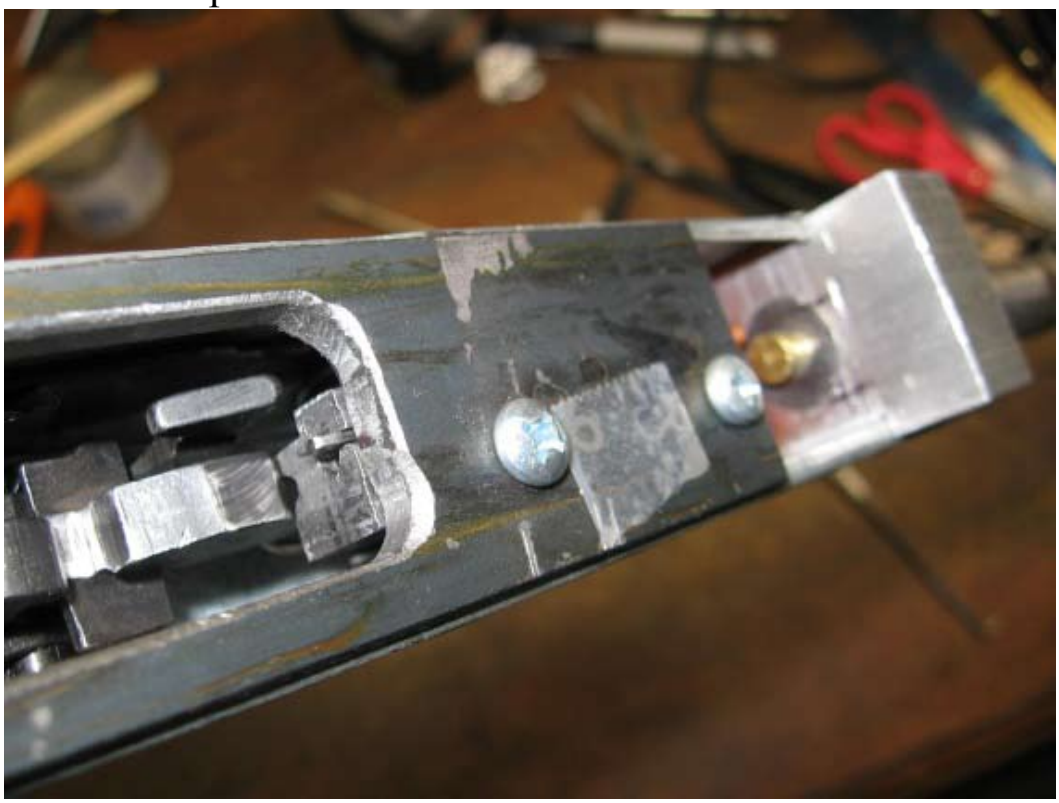
The picture above illustrates how to use a sheet metal gauge. You just slip the sheet metal into the gauge, and the thickness, or gauge, can be quickly determined. Starrett gauge is below.

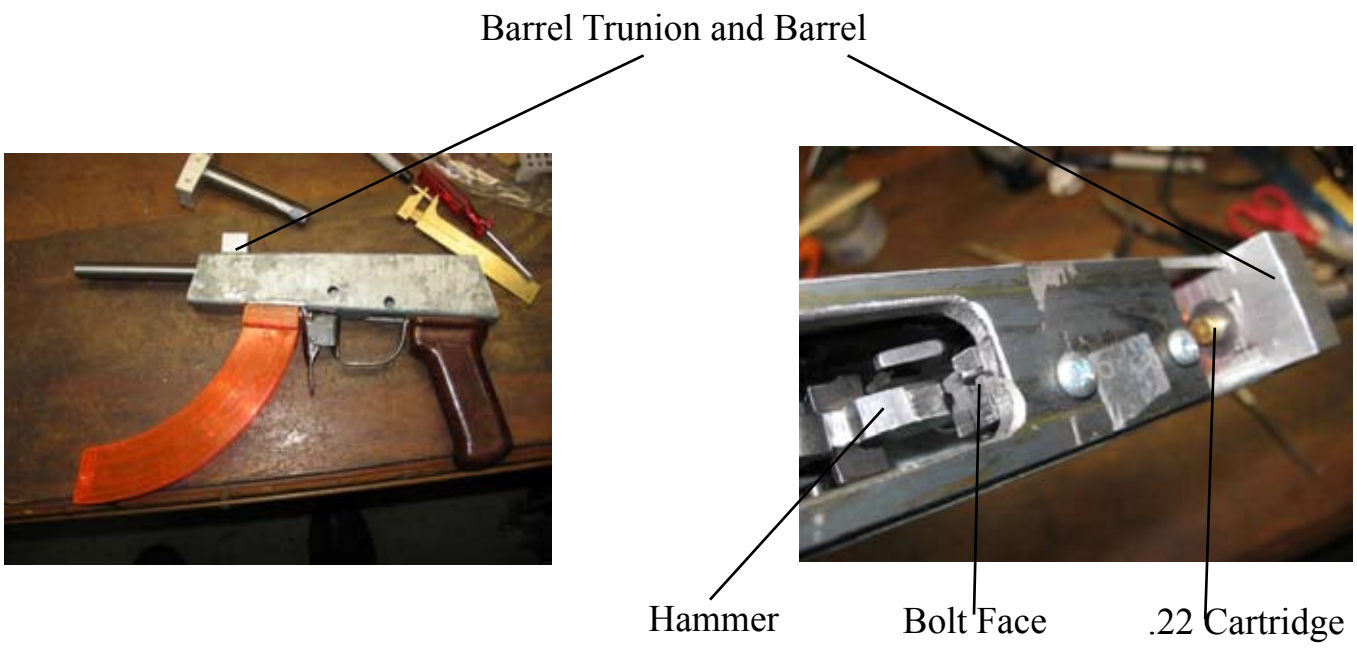


Version I - .22 Caliber AK Pistol Prototype:

With the overview complete, let's begin the actual build process:

Here's an overview of the 22 prototype, less the bolt: Below is the back of the bolt, showing the firing pin sticking up over the AK-style hammer. The bolt carrier is milled on this prototype, but I'm going to do a laminated bolt for version 2.0: Weaponeer





Above is a closeup of the bolt, unscrewed from the bolt carrier. The firing pin rides in a hacksawed channel, held back from the breech face with a little 1/8" diameter spring:

Here's the muzzle flash!

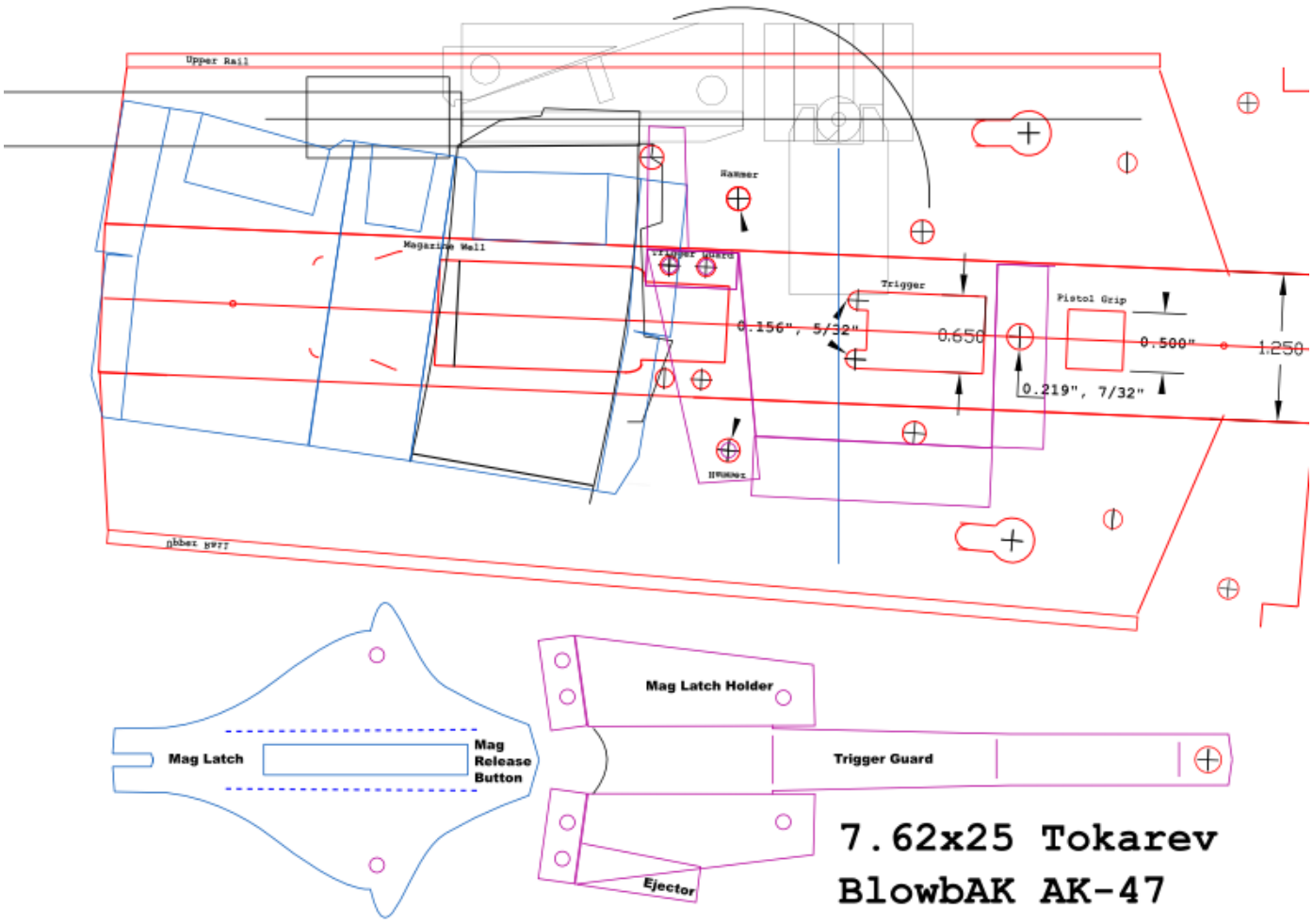
And here's a dissassembled pic. The only thing not shown is the totally-stock AK-47 Fire Control Group, (FCG). Note my crap-tastic custom-wound recoil spring--it looked a lot better before I tried to flatten it out where it passes the trigger group...

Version II - 7.62x25 Caliber AK Pistol

Just to whet your appetite for the 7.62x25 (CZ 52 barrel, PPSh 43 magazines) version, here's a little mockup of version 2 (using a handy stock-AK receiver). Man, do guns ever look better in black!

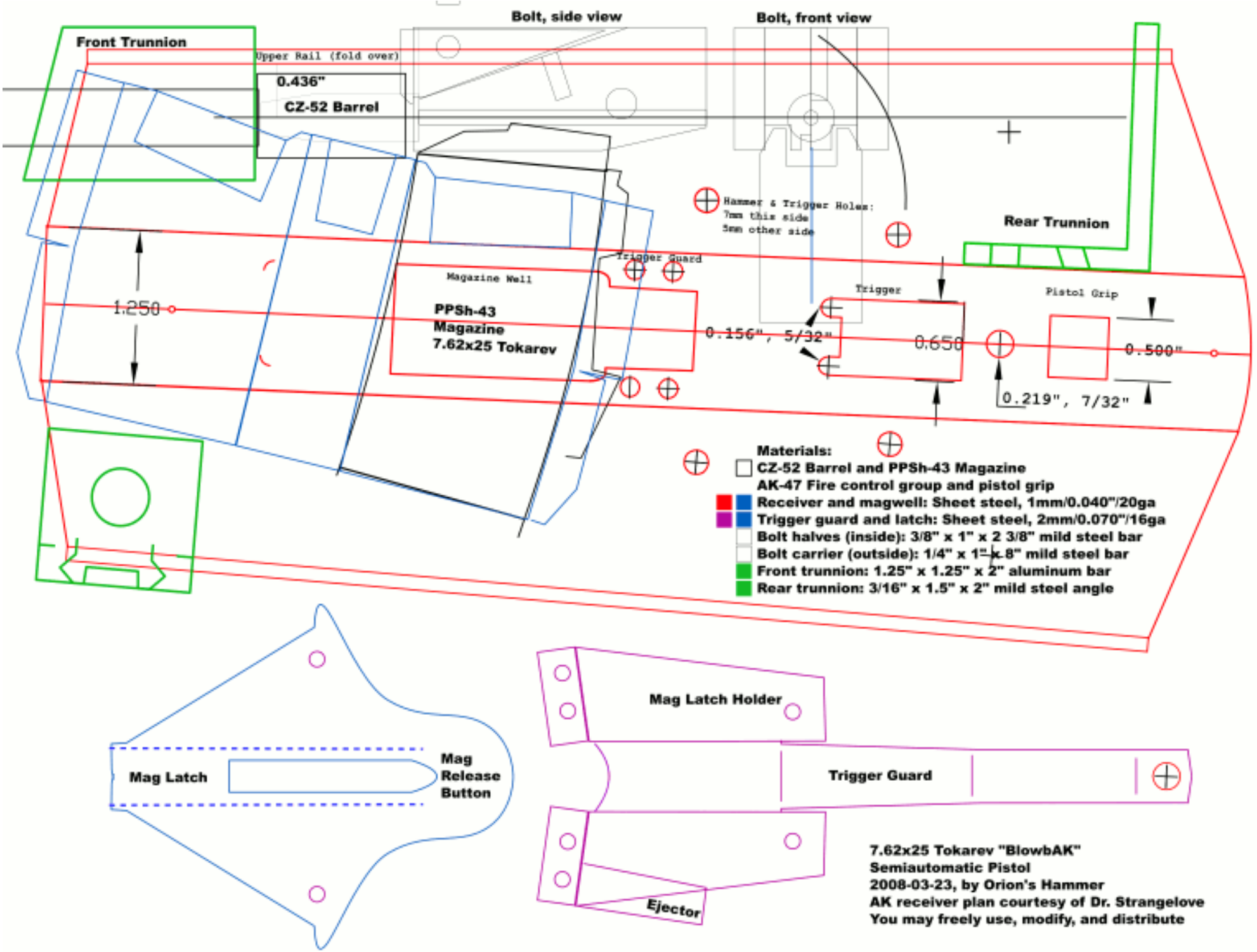
OK, I've got the plans for the second version working in CAD and with little paper mockups. Designing onscreen or in paper is sure a lot more forgiving than metal!

Here are the real components in an orientation that should feed:



I've been using the vector graphics program Inkscape to do the design--it's a pretty easy program to use, but it supports layers and "aliases" (copies that reflect changes to the original), which helps keep ye sane on a complicated drawing. Red is the receiver (AK-style folded sheet metal), thin black is the bolt (laminated from 1/4" and 3/8" bar steel), blue is the magazine guide and latch, and purple is the trigger guard (both heavy sheet metal).

Editors Note - Drawing on this page Not To Scale
Inkscape is Available at http://www.inkscape.org/


Front Trunnion
Upper Rail (fold over)
0.436"
CZ-52 Barrel
Bolt, side view
Bolt, front view
Hammer & Trigger Holes:
7mm this side
5mm other side
Rear Trunnion
Trigger Guard
Magazine Well
PPSh-43
Magazine
7.62x25 Tokarev
1.250
Trigger
0.156", 5/32"
0.650
Pistol Grip
0.500"
0.219", 7/32"
Materials:
CZ-52 Barrel and PPSh-43 Magazine
AK-47 Fire control group and pistol grip
Receiver and magwell: Sheet steel, 1mm/0.040"/20ga
Trigger guard and latch: Sheet steel, 2mm/0.070"/16ga
Bolt halves (inside): 3/8" x 1" x 2 3/8" mild steel bar
Bolt carrier (outside): 1/4" x 1" x 8" mild steel bar
Front trunnion: 1.25" x 1.25" x 2" aluminum bar
Rear trunnion: 3/16" x 1.5" x 2" mild steel angle
Mag Latch
Mag Release Button
Mag Latch Holder
Trigger Guard
Ejector
7.62x25 Tokarev "BlowbAK"
Semiautomatic Pistol
2008-03-23, by Orion's Hammer
AK receiver plan courtesy of Dr. Strangelove
You may freely use, modify, and distribute

On the previous page are the (never-yet-built!) plans in .svg format (zipped, because the forum requires it): v2_plans.zip

I've got some primo metal picked out to build this prototype--it's 0.035" galvanized steel scraps leftover from some duct fabrication! It's ridiculously floppy in a big sheet, but I'm always surprised at how strong this stuff gets once you put a few folds in it!

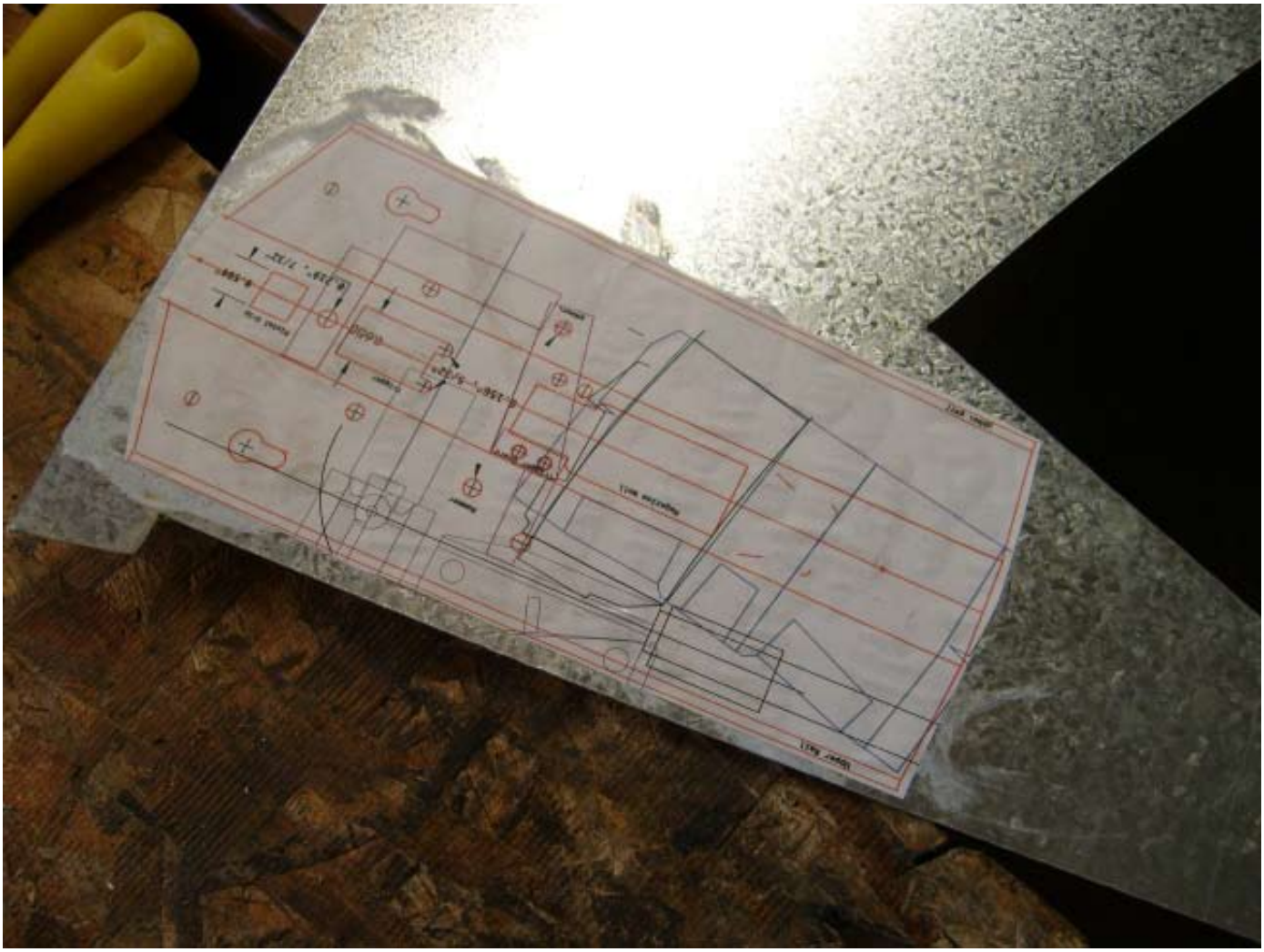
I'm a fan of the 7.62x25 Tokarev. In the cheap eastern-bloc military surplus loadings, it's a tiny 30 caliber 85gr pill going 1500fps, which seems like it'd penetrate substantially deeper than most other autoloader pistol calibers.

Regarding locking, I'm going with "straight blowback"--no rollers, no lugs, no nuttin!. The inertia of the bolt is the only thing holding the chamber closed, which actually works pretty well on pistol rounds. Rifle rounds don't work so well with this system for two reasons:

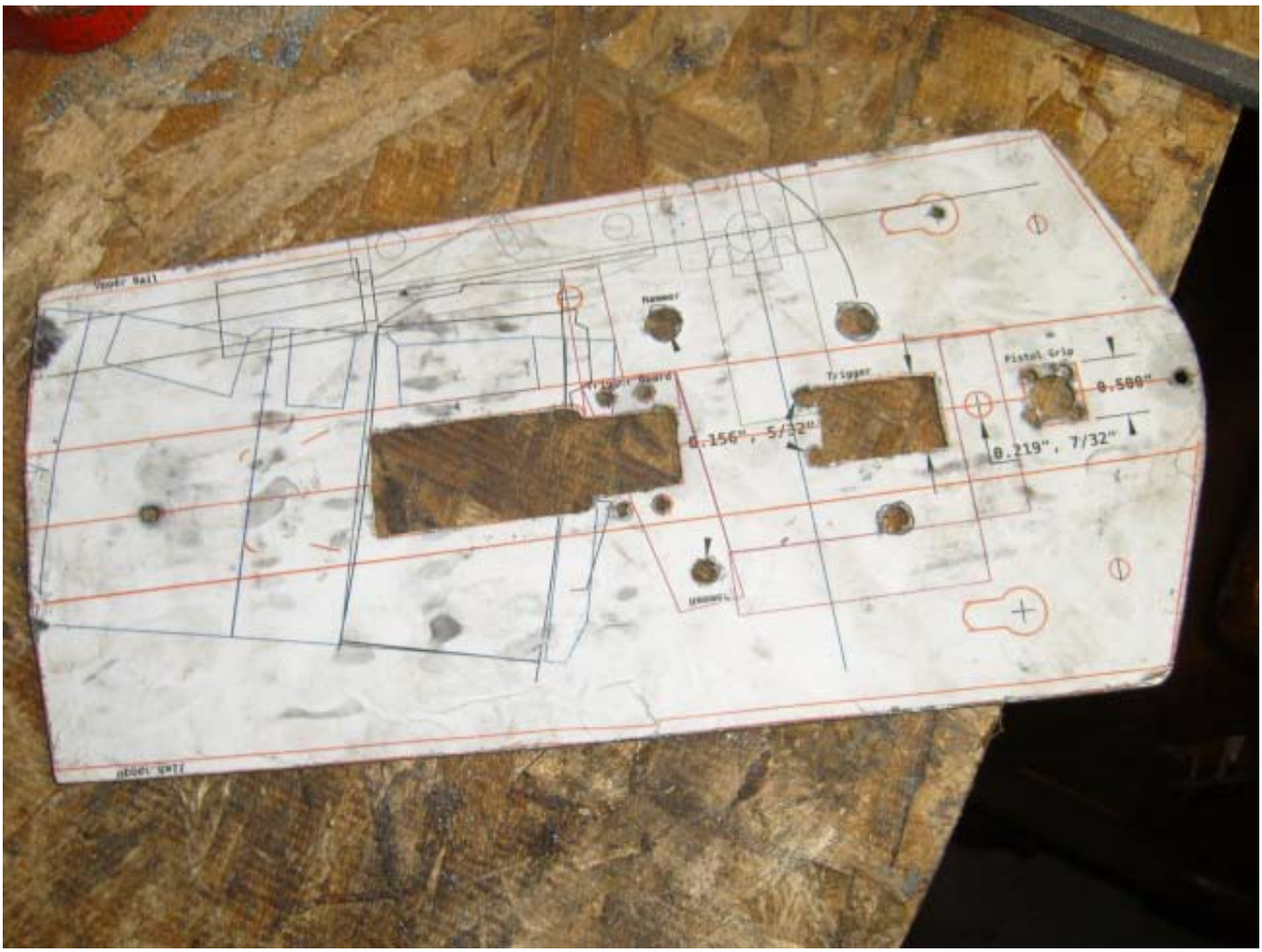
First, there's just a lot more pressure trying to push the bolt open; second, the pressure continues for longer due to the longer barrel. I am definitely going to need at least a pound or so of metal in the bolt--I haven't fabricated the above design, so I'm not sure how big/heavy the bolt will be. The PPSh (open-bolt submachinegun) safely uses a blowback design with 7.62x25, so here's hoping I won't get a kaboom on the first trigger pull!

I found the plans for a PPSh41 at www.biggerhammer.net, and staring at their bolt I've decided to tilt the magazine a bit farther than shown in the plans above, which will give me a bit more metal underneath the round on the bolt face. I notice Vorvon's Urban Brawler (which also uses PPSh mags) tilts the mags pretty steeply. Then again, I'm using PPSh 43 mags and a CZ-52 barrel, so... hope it works! The parts feed OK clamped to my desk, so hopefully they'll work in the pistol.

Oh, and today I built up a receiver, magwell, mag catch, and triggerguard-ejector from sheet metal!

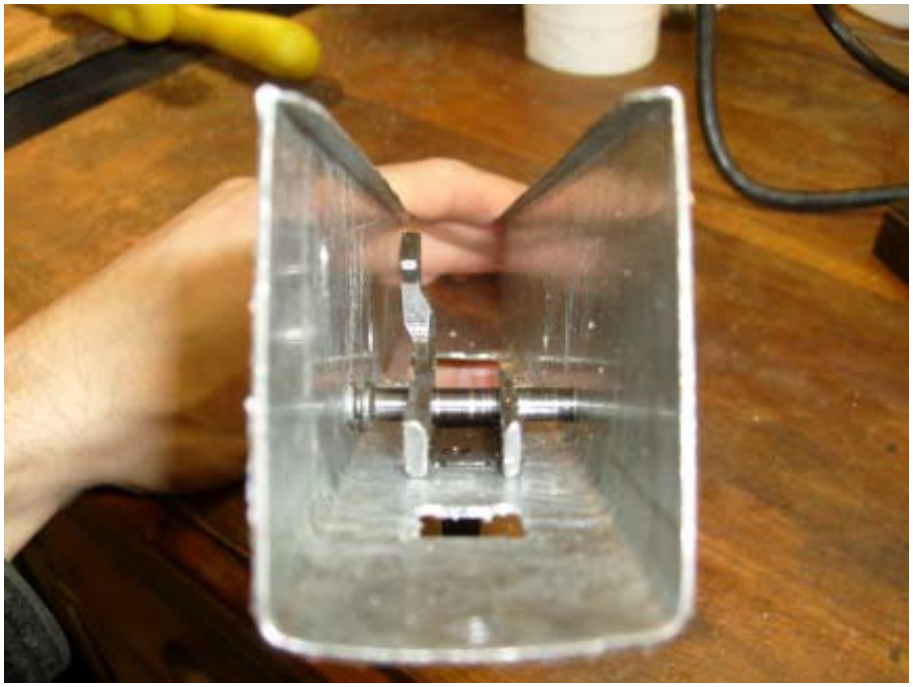


That's a sheet of galvanized steel duct, with a receiver printout glued on with Elmer's. I trimmed out the receiver with a jigsaw (and fine metal-cutting bit), punched and drilled out the usual holes (man, I'm glad I bought those 5mm & 7mm drill bits!), and finished off the magwell and trigger holes with the jigsaw and a file. 0.035" steel files down very quickly. A sane person would just buy an AK flat, but my magwell is pretty different, and it only takes half an hour to bang out one of these:



I then hammered over the top rail in my vice, and used my "custom" AK bending jig (made from blue 1 1/4" angle iron originally from a mattress frame!) to finish the thing off. I don't have any dimples in my flat, so the bending jig can consist of plain angle iron plus two 1/8" flat alignment holes. You thread pin punches through the holes to align the flat to the jig, fold one side, then flip the flat and fold the other side. (Or use a real AK jig!)

OK, receiver complete!



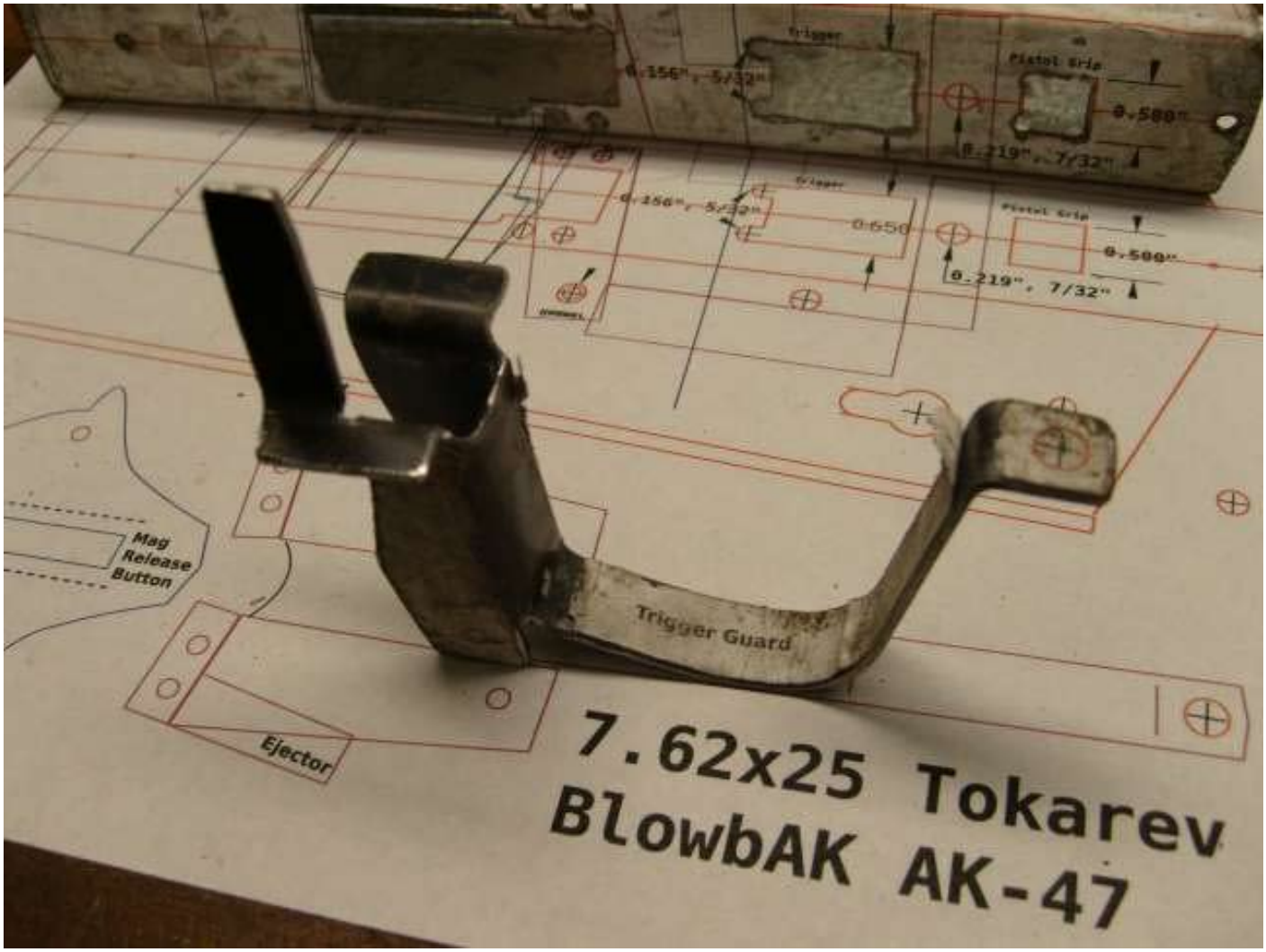
And now it's the same story for the mag catch and trigger guard, in 1/16" mild steel sheet. The thicker steel sure cuts a lot slower with my jigsaw!

Here are all the sheet metal parts, cut and filed off. I did the magwell with tin snips, which worked fine.

Now for folding! I still hate folding sheet metal, but I'm slowly figuring out how to do it. Without a hydraulic press, I've been doing these with a big hammer (cough!) and bench vice. Steel bar stock sure makes nice mandrels for forming the sheet metal around, and the order of folding makes a huge difference in how easy it is to get at the various pieces. The glued-on template instantly gets scuffed up and nasty, but it makes it so much easier to figure out exactly where to put the bends! Here are the finished parts:

Receiver is at the top. From left to right, the mag well (a sheet metal box), mag catch (folded around a 3/8" bar stock mandrel), and finally the trigger guard (folded around a 1/2" bar stock mandrel).

It's definitely not saying much, but this is the nicest-looking AK trigger guard I've ever fabricated! The weird vertical thing sticking up is the ejector. Figuring out which way I made the bends on the trigger guard still makes my head hurt!



Coming soon: aluminum barrel trunnion! Bar steel bolt! Drill rod firing pin! And FIRING!

Bolt Weight & Calculations:

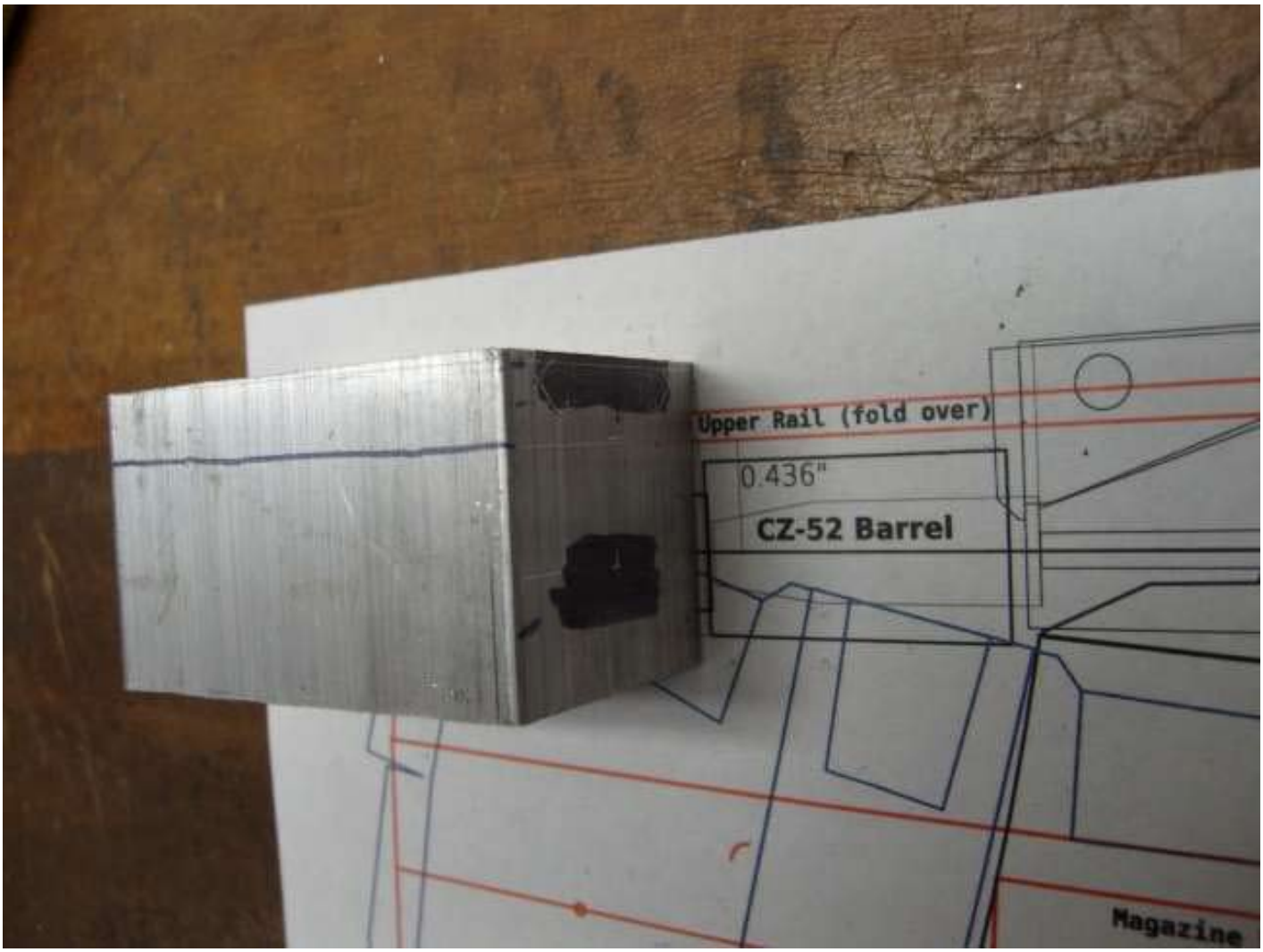
The CZ-52 pistol is roller-locked (little hardened steel rollers hold the slide to the barrel during the first phase of firing) and recoil-operated, so I suspect the barrel+slide combination would be substantially lighter than a pure blowback design like I'm trying to build.

Now, if you had a PPSh, I'd be (jealous and) very curious what the weight of the bolt is! From the plans, it looks like the PPSh bolt is maybe 0.5"x1"x4.5" on top plus 1"x1"x2.5" on bottom, for a total of 5 cubic inches of steel (at the most, since I'm ignoring the many holes, slots, and top/bottom overlap). Steel's a little under 1/3lb per cubic inch, so 5 cubic inches is 1.4lbs (upper weight limit, probably lower in practice). Of course, in a submachinegun the weight of the bolt not only holds the bolt closed during fire, but also determines the cyclic rate, so the PPSh bolt is probably heavier than needed for safety. I'm hoping for about a 1-lb bolt (a pistol can't be too heavy, after all!), which will take about 3.5 cubic inches of steel (e.g., 1"x1.25"x2.8").

Actually, regarding the bolt weight question there's a good entry at some cool firearm design forum where Buspete said: "We weighedbolts from a Sten, Uzi, FMK-3, Baretta 38, PPSh41 and PPs43 and all were in the 1.3-1.5 lb range." This agrees disturbingly well with my density calculations above!

One way to look at it, is it's the same pressure both pushing the bullet down the barrel and the cartridge/bolt out of the chamber. The bullet weighs 85gr, or 85/7000 = 0.012lbs, and will reach 1500 feet per second traveling 4 inches (the barrel length).

If the cartridge/bolt weighs one pound and the same force acts on it for the same length of time, the bolt will reach 0.012 times the velocity (18fps, a typical healthy slide recoil speed) and hence cover 0.012 times the distance (50 thousandths, less than 1/16") by the time the bullet leaves the barrel.



OK, I fabricated the front trunnion today! The front trunnion's job is to hold the barrel to the receiver, and optionally to act as a front sight--I've sketched a little rail on the top for a red-dot sight, although I don't know if I'll use it. The trunnion started life as a chunk of aluminum bar stock:

I cut two slots in the trunnion (for the receiver's top rails to fit in) using what will be a recurring technique in this build: a metal-cutting bandsaw used as a slotting/ milling machine. A hacksaw would also work, but it would take a *long* time.

Frankly, of all the power tools in my shop (aside from my drill press) the most time-saving tool is my metal-cutting bandsaw. The first time I cut a 1"x1" steel bar with it (clamp bar in bandsaw, turn on, wait five minutes, clink!) I fell in love!

The sawblade's kerf is about 40 thousandths, which is just over the thickness of my receiver, so I only need to make one pass. Measure carefully! Once the blade starts cutting, it'll get sucked back into its old groove if you try a new starting spot.

Again...The sawblade's kerf is about 40 thousandths, which is just over the thickness of my receiver, so I only need to make one pass.

Measure carefully! Once the blade starts cutting, it'll get sucked back into its old groove if you try a new starting spot.

With the slots cut, all we need is a hole for the barrel.

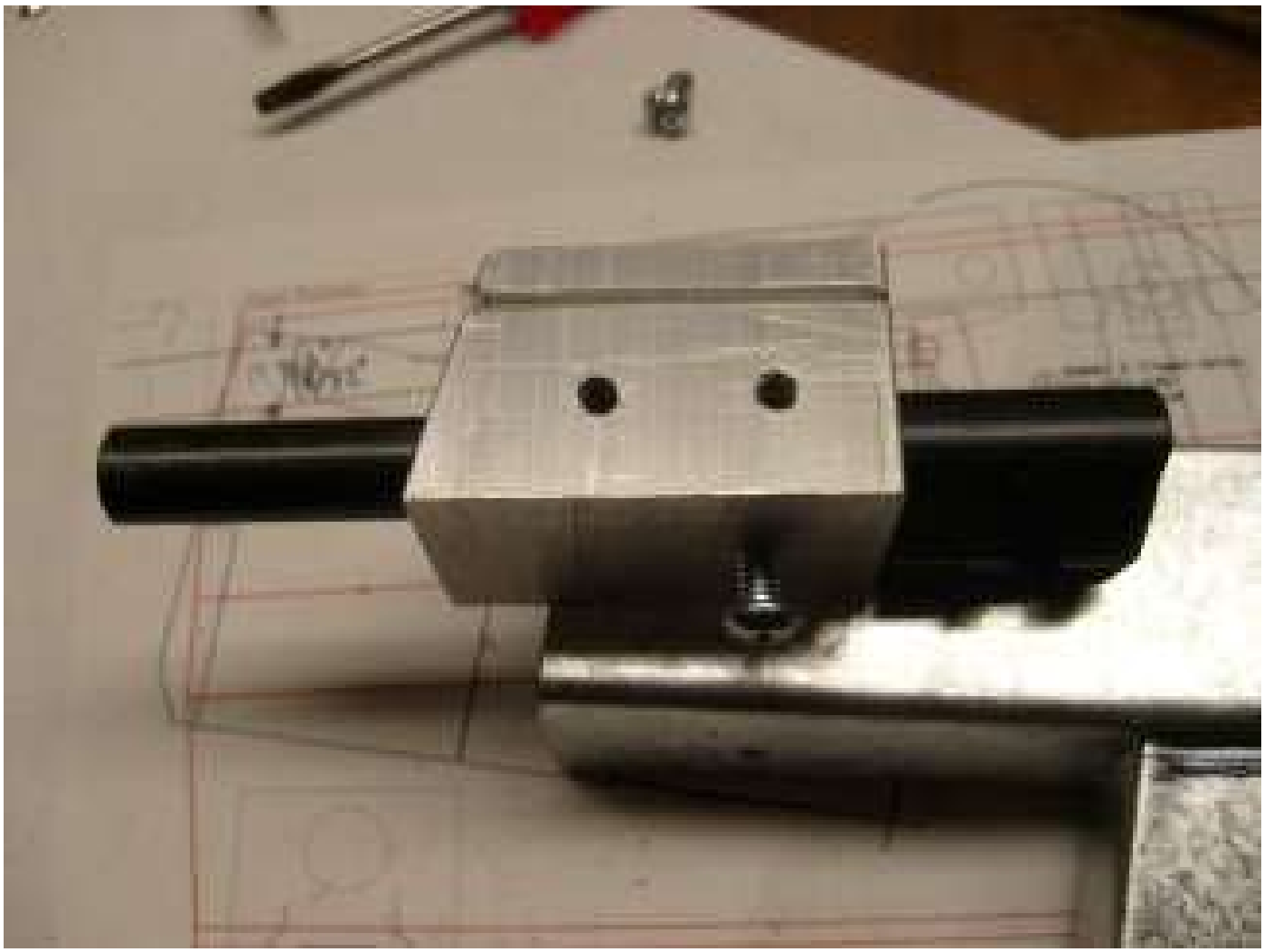
The CZ-52 barrel I'm using for this build has a diameter of 0.467", which is close enough to 15/32 (0.46875") to work nicely.

I started with a 1/4 drill bit in a center punched hole:

With the initial hole in the right place (to center the big bit) and going through the metal (so chips can fall out), I stepped up to the 15/32” hole. After working steel, aluminum sure is easy to cut!

Now I trim down the front of the trunnion to match the receiver's slanted front:

Now drill and tap holes for #10 machine screws to clamp the barrel to the trunnion, and hold the trunnion to the receiver. Rather than carefully measuring, marking, and fitting, I just drill the receiver and trunnion at the same time!

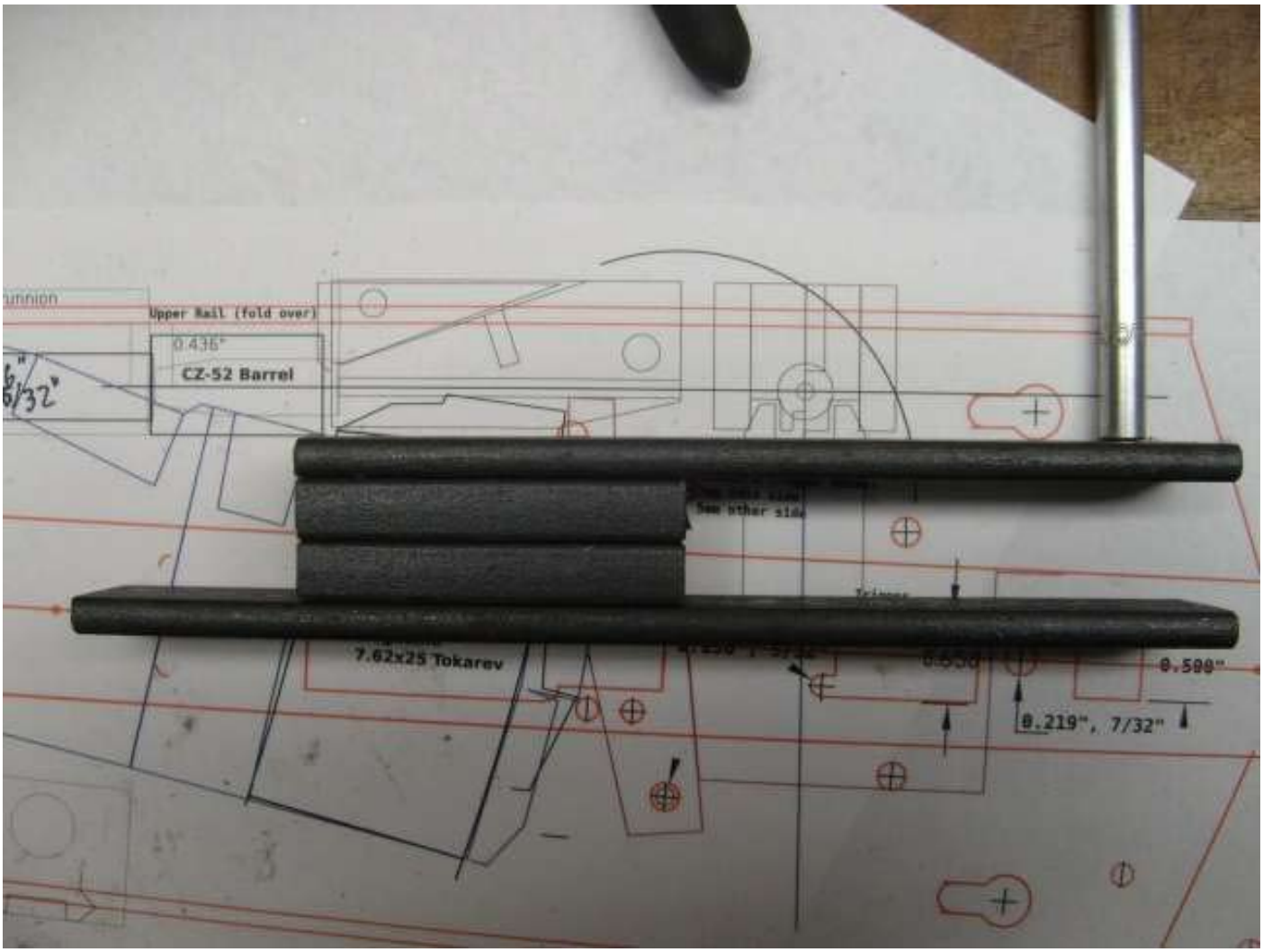


And now we have a functional barrel trunnion!

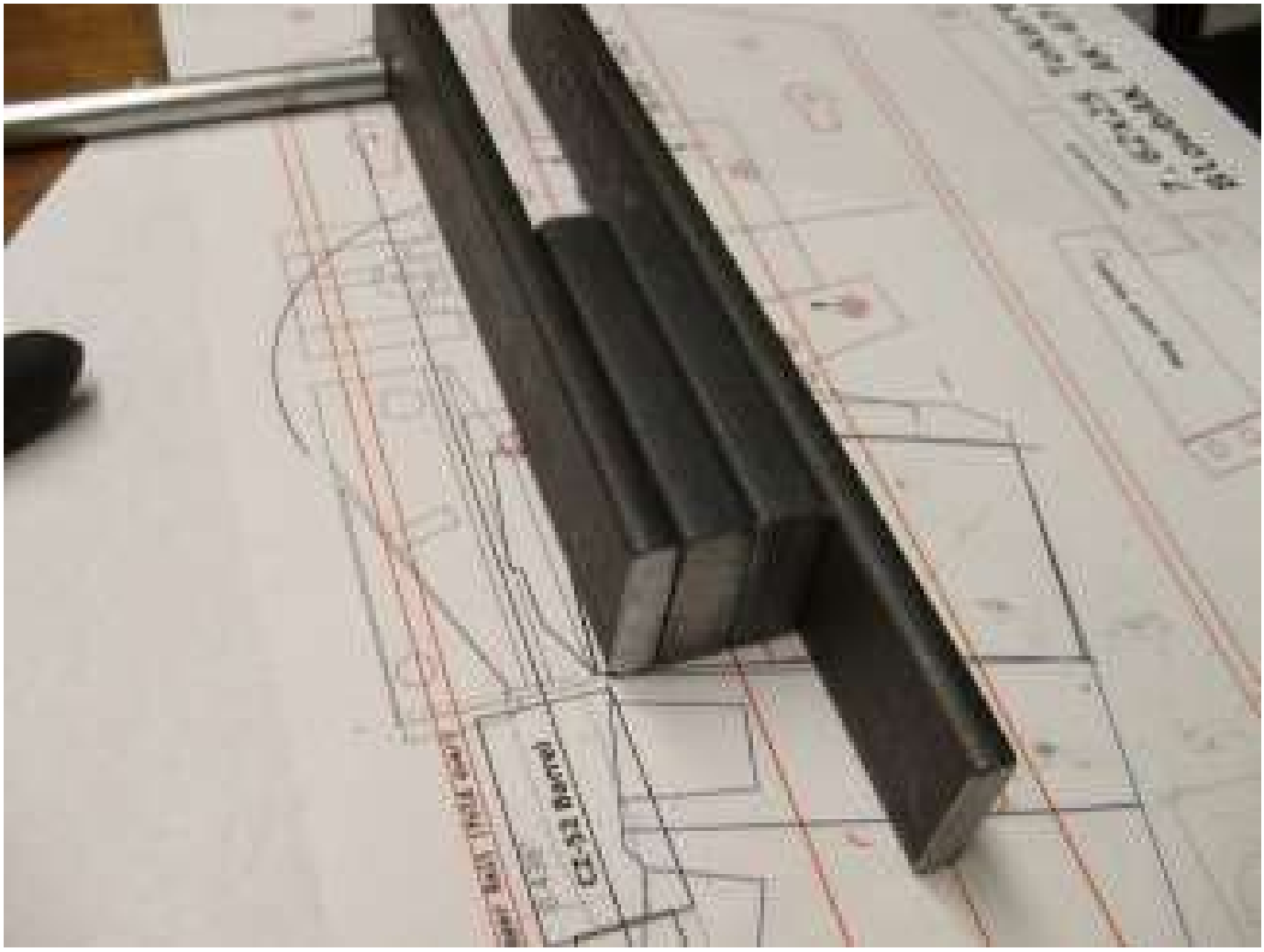
Remember that the barrel trunnion only covers the round portion of the barrel. The squared portion protrudes out the back and enables the left front of the bolt to "wrap" around the barrel. The great part about this design is that you can use ANY barrel in your Orion AK. Shown above and below is the CZ-52 barrel that Orion used in his original AK.

A bit more controversially, I've decided to epoxy my magazine well to the receiver. The right way to attach it would be a milled magwell adapter, or some fiddly folding and spot welds, but I want to keep this build low-tech!

Epoxy seems to either stick very nicely or not at all. If it won't bond or instantly cracks off, I can figure some more traditional means of mounting. I realize epoxy (like aluminum) is not one of the three approved materials for gun making: mild steel, tool steel, and spring steel!



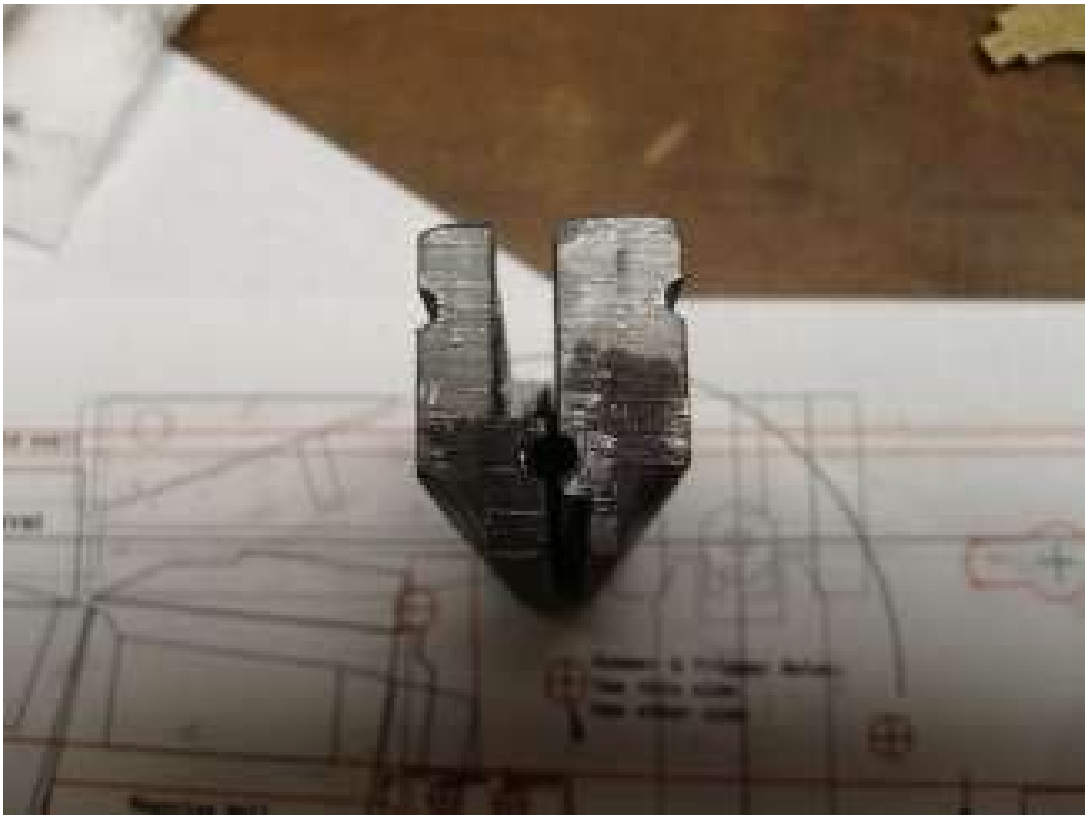
Speaking of which, I cut four pieces of mild steel stock for the quasi-wraparound bolt. The long thin pieces will be slotted to run along the receiver rails, and the thicker middle pieces will be drilled and "milled" (on the hacksaw!) for the firing pin and extractor.



Prior to cutting, my four pieces of bolt stock weigh 1.6lbs, so I should have a plenty-heavy bolt! Actually, I'm already looking at 4lbs loaded weight for the pistol overall, which is closing in on rifle-weight, but darn it 30 rounds of ammo is heavy!

Next I cut rectangular channels for the extractor, ejector, and relief so the bolt will clear the magazine. You can do an amazing variety of machining with a bandsaw/hacksaw, but one thing you just can't do is wide slots--you can make side cuts easily, but digging out the trench in between isn't really possible.

Here's the finished bolt face and bottom. Once I know exactly where the back of the cartridge will sit, I'll add a little pocket for it to sit in.

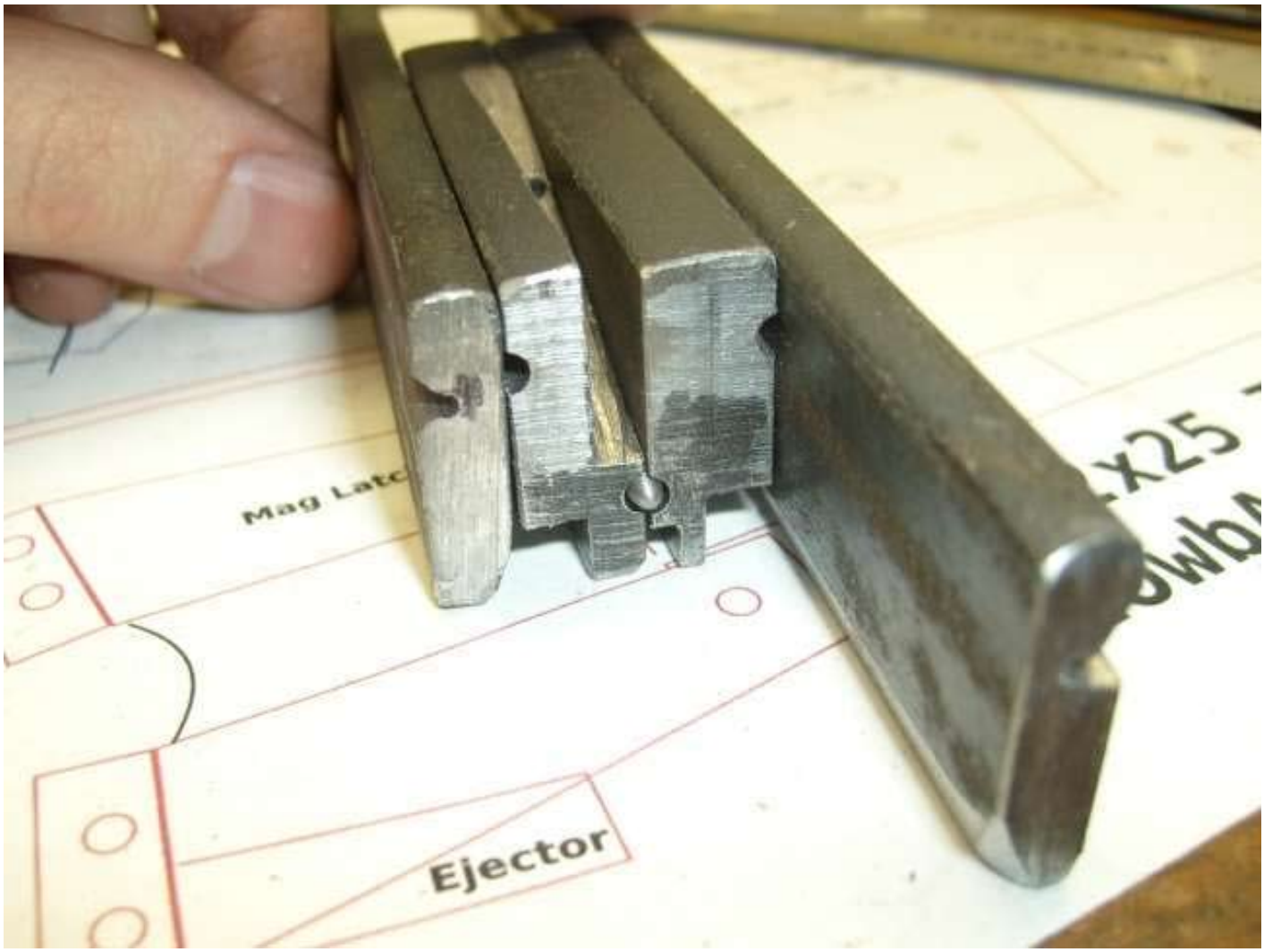


Now I “lathe” the firing pin tip on my drill press.

Yeah, the firing pin channel really does curve like that--my 1/8” drill bit wandered a bit during the 2 3/8” deep plunge!

I also bandsaw-milled in long narrow slots for the receiver top rails in the longer 1/4” bolt carrier pieces. With all four bolt pieces basically done, I did a feed test. It works!

Here's the front view of the basically-finished bolt sections:



I've yet to:
- Fix the bolt sections together with a few big screws.
- Attach the extractor to the bolt.
- Attach the trigger guard to the receiver.
- Tune & fit.
- Test fire!

Gundoctor, the make-slot-via-drill-and-cut-sides technique is a really good idea! But I sure have a hard time drilling small deep holes without the bit wandering---Does anybody know any tricks for keeping drilled holes straight? A boring head would work for larger-diameter holes, but if you've already got a mill, slots aren't a problem!

-Gclark, glad you like my posts! What I find striking is how *simple* gunmaking can be--compared to building, say, a functioning engine without a lathe. It makes the hut-dwelling gunmakers of, say, the Khyber Pass in Pakistan a lot more understandable.

Today, I bolted the bolt sections together:

That's a 1/4" bolt down below the rails, countersunk into the bolt face. This lower bolt passes through the firing pin channel, and will be used below to hold the firing pin in place. Up top is a #10-24 machine screw, doubling as a charging handle, and eventually acting as the extractor pivot/retainer.

Here's a closeup of the firing pin, with a little filed-out area to clear the retaining bolt. My dang firing pin channel is so curved, I ended up switching to a 3/32" diameter pin to get it to move freely--you gotta be 100% sure your firing pin is free to slide back and forth, because if it sticks forward you're in a very dangerous situation!

I did the bolt in sections to avoid having to cut tricky slots in a single hunk of metal, but I like being able to easily just crack the bolt in half and clean out, for example, the firing pin channel. For corrosive ammo like my surplus 7.62x25, this is important!

I also fit up the (stock AK) hammer and trigger/ disconnector. The hammer needs a bit of trimming to clear the bottom of the bolt (typical!), but it looks like everything's going to work! I should be able to test fire tomorrow or the next day!

Frequently Asked Questions:

Regarding safety, I'm planning on firing the first few test rounds with a string, and the pistol held in a vice, with me several yards away behind a yard-thick dirt berm. It's kinda my standard protocol on untested firearms, because I don't like shrapnel.

I've got one box of Bulgarian ammo with headstamp numbers just one digit away from some known-bad Bulgarian Tokarev. Most of the cases have deeply split necks, and supposedly these run pretty hot. I figure if my new action can shoot off these safely, I can trust it with (milder) Winchester or handloads.

One nice thing about a blowback firearm is that headspace isn't a potential problem, because the bolt isn't locked to the forward trunnion with lugs--the bolt just runs forward until the cartridge case is jammed solidly into the chamber. Also, in the event of a case head separation, my trunnion leaves a 1" x 1" hole for gasses to escape upward and 1" x 1/4" hole forward, both away from the shooter.

Finally, the Skorpion/AK design's forward-of-handguard magazine means the chamber is 4+ inches away from your firing hand (unlike a conventional pistol, where the chamber is right on top of your hand!).

Still, my inner lawyer has asked me to remind potential builders of this sort of gun to protect yourself like I do-- stay behind several yards of dirt before remotely-firing any experimental gun design, at least for a few dozen rounds of the hottest ammo you can find.

Frequently Asked Questions:

Drilling straight hole:
I assume a drill press. Use a good bit. center punch it. Keep the chips clear and steady. It will be straight. Most are crooked because the bit wanders a little when starting the hole and starts at an angle.

Test firing:
I would not use a vise--it will put a lot more pressure on the whole thing than is needed or than will happen when you fire it in your hands. The whole gun moves when you hold it, and that takes up some of the recoil, as does your hands and body recoiling.

You are part of your recoil system. Fixed in a vise may break the grip or make the bolt hit the rear pretty hard. The opposite happens when someone shoots a semi "limp wristed"-- the whole gun recoils so much that the bolt or slide doesn't even cycle.

Finally:
I usually use some sandbags (under and over) to allow the gun to recoil. Do not put any rounds in a magazine with a string on the trigger because it might be aiming at you or something you value when the other rounds go off. If it ran away (i.e. went Full Auto) it would probably kill you.

Don't "jerk" the string either--as you may move the whole thing--and possibly the direction of the muzzle.

Test your system with some dry fires first.

Frequently Asked Questions:

I have shot the tokarev with a M11 9mm bolt and it seems to do fine. It is hotter (velocity) but the mass of the bullet is lighter yielding about the same impulse to the bolt in my opinion. The OEM bolts /springs I have from 9mm and 7.62 tok weapons are very similiar in mass /strength as well.

I wonder if your trunnion attachment--which looks like some pretty soft and small Chinese machine screws--may be suspect. I think 2-3 pin about 1/4" or better that were peened on both sides might be more secure, and drilling in the tight place would also let these retain the barrel for you. If the trunnion doesn't fit tightly at the bottom of your receiver (can't see from pix) I would make a spacer to take up that space as well--it will be a lot stronger if it is bearing there.

OK! The good news: it fires! And even better, the recoil (at least at the trunnion) is fairly small, and the fired (hot Bulgarian) cases even survived as well. Here's my test setup:

So that's a big bench vise, with the firearm clamped by the forward receiver, sitting outside and ready to fire via string. A 1/2" polyethylene shield is for shrapnel containment should something go wrong. The tester (me!) is sitting ten yards away behind a berm of snowy dirt, safely pulling the string. The vice doesn't move perceptibly during firing.

You can see:

- The gap between the made-in-two-halves bolt left an imprint on the primer, which is showing signs of very healthy pressure (it's *hot* ammo!).
- The case head did not separate. No bulges are visible. This means my bolt (which came out at exactly 1.4lbs!) is indeed heavy enough to safely keep the ammo in the chamber during firing.
- I need to round over the edge of my firing pin hole, to keep the sharp corner from digging into the primer.

Actually, a smaller firing pin hole or bigger firing pin would also help avoid pierced primers, but that's just finish work.

Now the bad news:

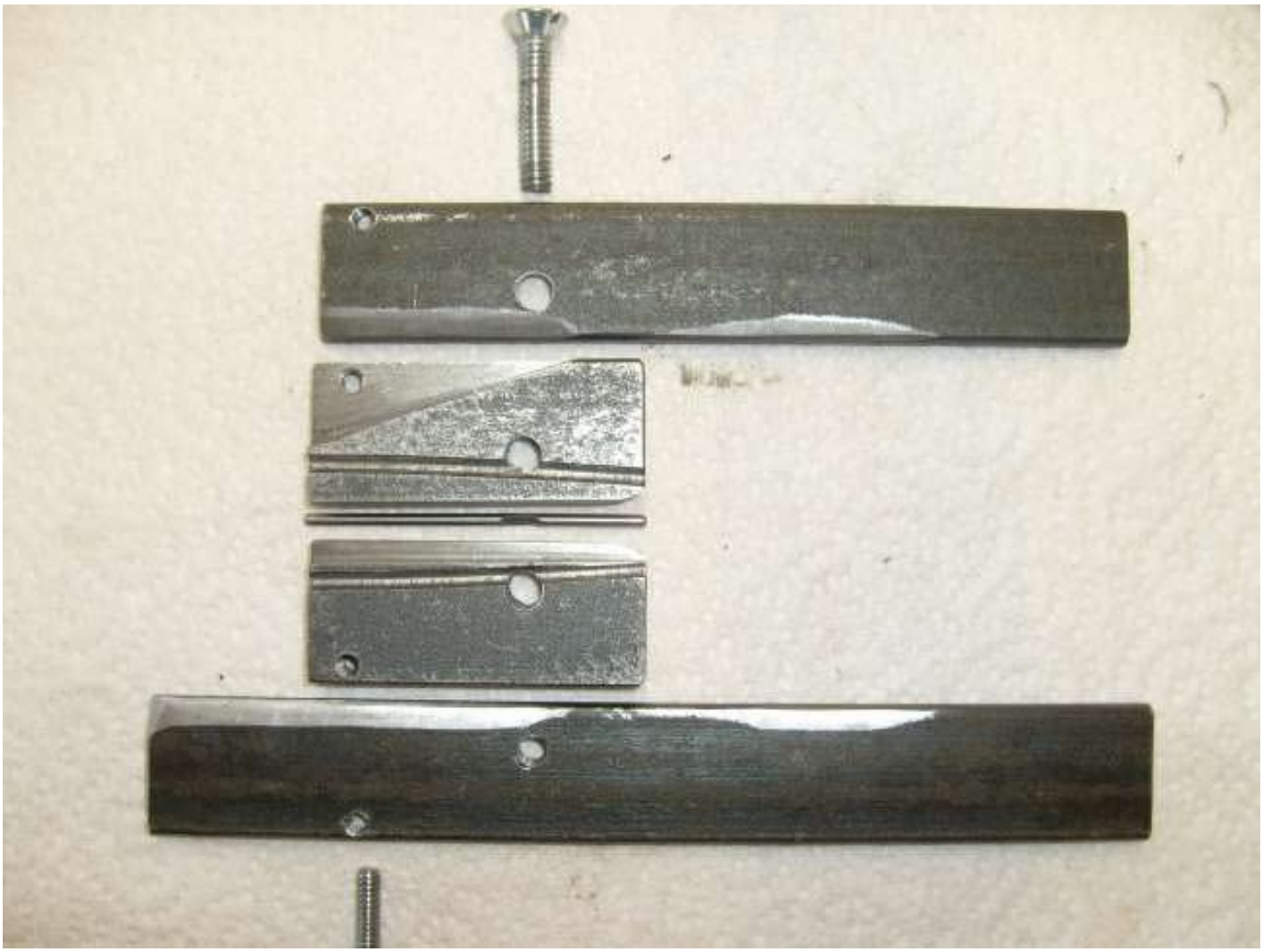
I did this test without a recoil spring or rear trunnion, because I wanted to figure out the bolt's post-firing velocity (for example, to size the recoil spring) based on the distance it flew. That idea will probably work great, as soon as I can locate the bolt and dig it out of my snowy, dirty backstop!

Note to self:

When doing an explosively-disassemble-the-gun experiment in the field, at least tie some bright orange streamers around the parts you expect to have to dig out of the hillside!

Now that I've got daylight, I did a sort of ballistic reconstruction to estimate my bolt's post-firing flight path, and figured out more or less where on the hillside I should start digging.

I found the bolt buried about eight inches into the snowy ashy soil, close to ten feet from where the gun was fired! That's why the recoil spring and rear trunnion are safety-critical items, folks!



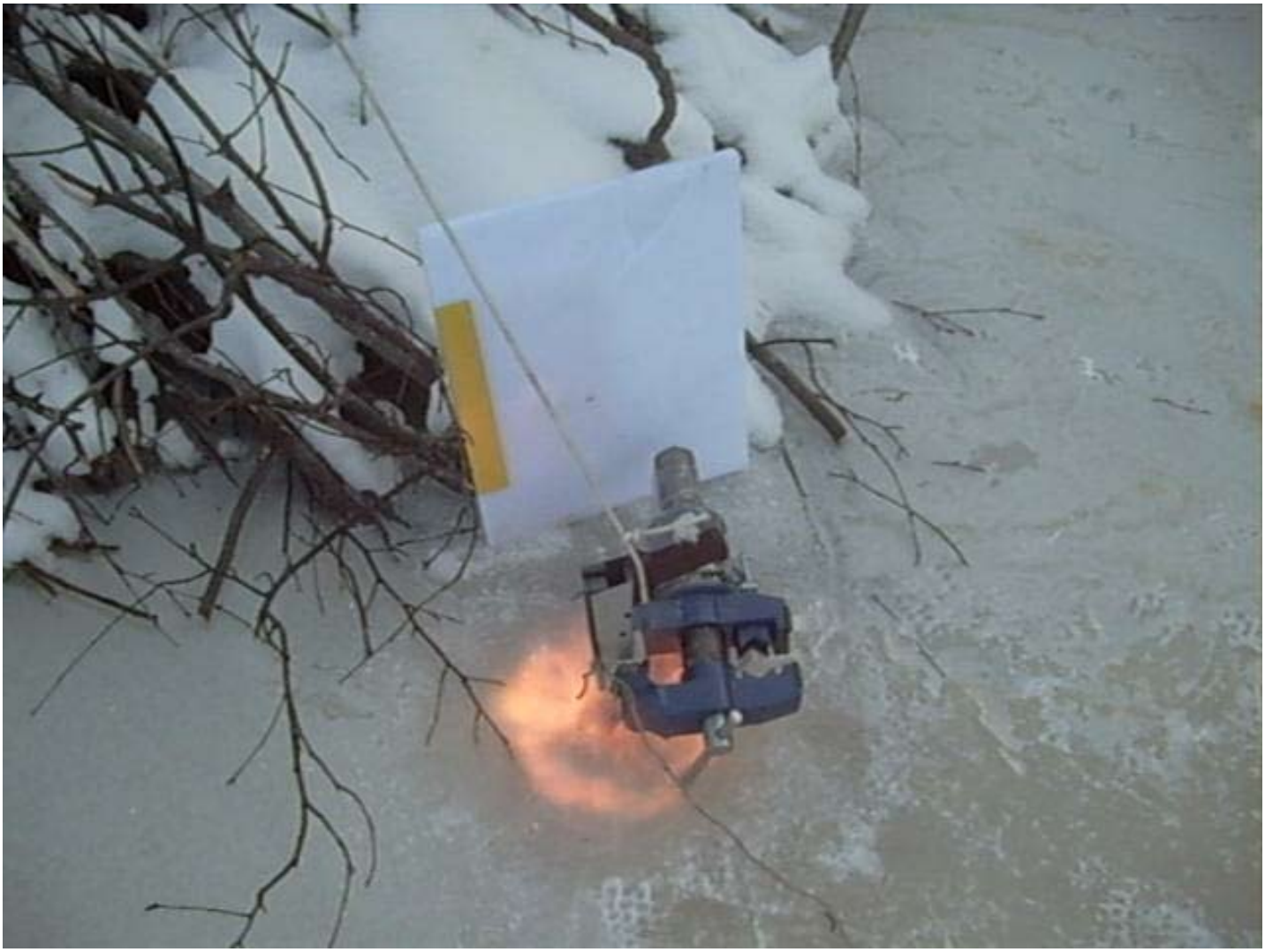
I tore the bolt down completely so I could clean the frozen dirt out:

I fired off a few more test shots, this time on a frozen creek where I could shoot straight down. I also tied a little twine around the charging handle so I wouldn't lose the bolt again.

I took video this time, but there's only 0.3 seconds of action.

Here's the frame before trigger-pull:

Now I pull the string. The muzzle flash is visible in broad daylight! Also note how the back of the bolt is starting to motion-blur:

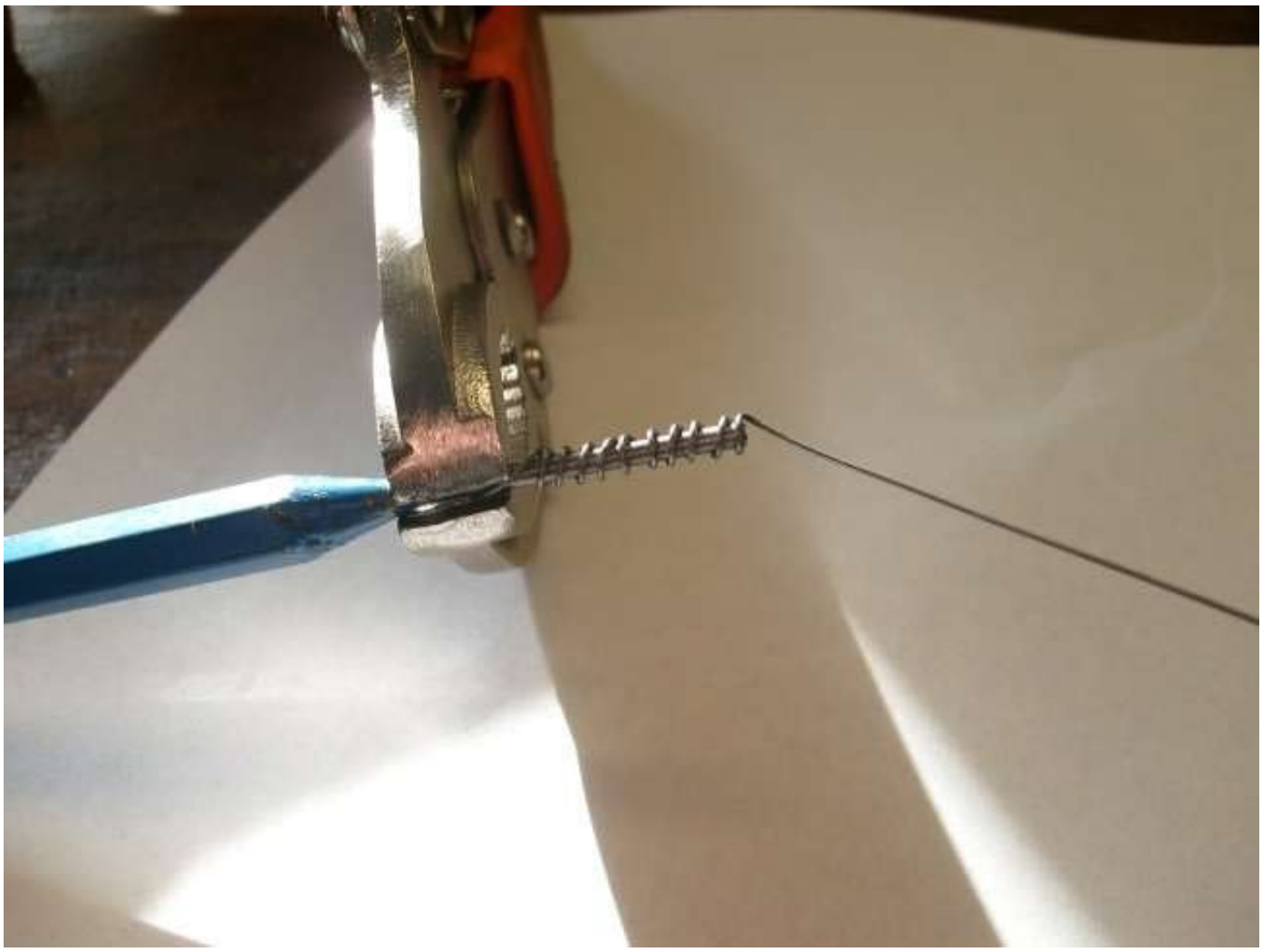


Here's 1/30 second later. The bolt has left the fire-arm! The little blur to the right of the bolt is the shell casing--despite not having an extractor, the case ejects itself nicely! (I never located another shell casing, though!)

And so on. The bolt flies offscreen two frames later, but was easily recovered via the string. Little flying flecks of ice go shooting off in all directions.

At about 8 inches per 1/30 second frame, the bolt is moving at about 20ft/s. The bolt reached about 7ft altitude before falling, which leads to a similar estimated bolt velocity. Note the residual chamber pressure is likely higher than normal in this case, where the muzzle was only a few inches away from the solid ice!

For the recoil spring I've got a channel a little under 1/4" wide and 3.5" long between the hammer axis pin and the back side of the bolt. With the bolt fully extended, this spring should stretch to 6.5" long. I need to dust off my physics book to figure out just how much force the spring needs to apply at that length to stop the bolt just short of the rear trunnion.



Springs:

I'm planning on winding my own recoil spring from music wire. Here's how I made my disconnector spring (AK parts kits often seem to be missing this spring!), starting from 0.024" music wire wound around a 3/64" pin punch.

I learned springmaking from Bazillion's awesome springmaking site:

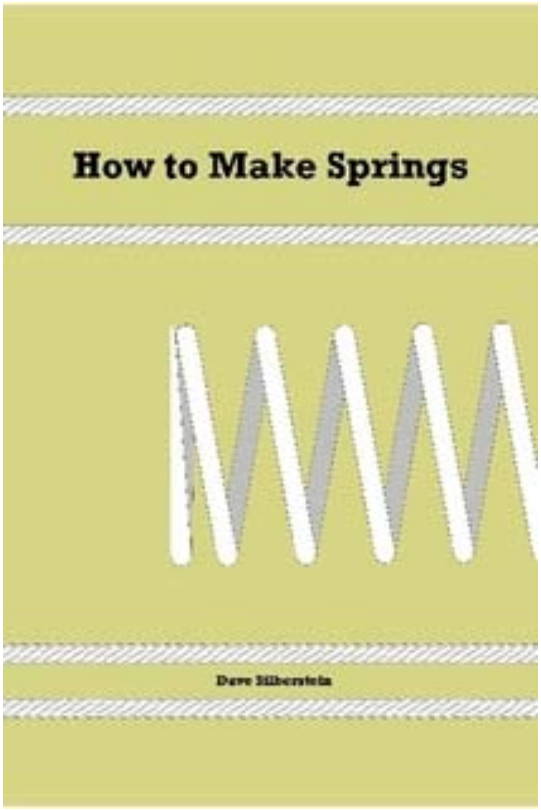
http://home.earthlink.net/~bazillion/compression.html

Compression Springs:

If you need to Google the page, here is the text from the first paragraph:
"This page will tell you how to make compression springs. Making compression springs is a lot more fun than making either extension or torsion springs, but it's also a lot more complicated....."

If you would like to buy the book, you can go here:

How to Make Springs
by Dave Silberstein
http://www.lulu.com/content/1011687



But the bottom line is: it works! And Tokarev seems to have plenty of power to both smash the AK hammer back down and launch the bolt back at the operator at high velocity too!

I finally cracked open my physics books to try to figure out how strong my recoil spring should be, in order to stop my bolt just short of the rear trunnion. The bolt's initial velocity is known from the experiments above. Looks like in general for a mass-on-a-spring system, the oscillation velocity is W = sqrt(k/m) radians/second, where k is the spring constant (stiffness) and m is the (bolt) mass.

We want the amplitude to equal the bolt's travel distance back to the rear trunnion, call it A=0.25ft, so overall the bolt position P(t) = A sin(W t).

The velocity V of a mass-on-spring system is V(t) = A W cos(W t), which at t=0 is just A W.

So:
A = bolt total travel distance
A W = bolt initial velocity
W = sqrt(k/m) = bolt velocity / bolt distance

So overall we've got:
k = m W^2
spring stiffness = bolt mass * (bolt velocity / bolt distance)^2

In our case, bolt mass = 1.4lb (or 0.0435 slugs), bolt velocity = 21fps, and bolt distance = 0.25ft. So our spring's stiffness should equal 300 lb/ft--this is really very stiff!

For example, with the bolt pulled all the way back, at 3 inches, the spring will push back with a 75lb force!

Just for completeness, we figured out earlier that the bolt's velocity should equal:

bolt velocity = bullet velocity * bullet mass / bolt mass * pressure-area ratio
Where pressure-area ratio is the ratio of the cartridge base area (pushing on the bolt) and the bullet's base area (pushing on the bullet).

For my gun, this bolt velocity estimate comes out at 21fps--just like reality!

Combining these two equations, we can build a general blowback spring recoil design equation:

spring stiffness = (bullet velocity * bullet mass * pressure-area ratio / bolt distance)^2 / bolt mass

So faster bullets, heavier bullets, and bigger cases all require dramatically larger recoil springs. A higher bolt mass drops the required stiffness linearly. Surprisingly, a longer recoil distance cuts the required spring stiffness substantially--if you double the bolt travel, you can cut the spring stiffness to one-fourth the old value!

And yes, this equation also tells me I need an insanely stiff 300 lb/ft recoil spring. Or do I? Another option is to just let the bolt slam into the rear trunnion at high velocity, and dissipate the bolt's velocity in the collision!

I bought a little sheet of Sorbothane, which I've been very happy with in recoil pads, so I'm going to try putting a little tab of it on my (freshly fabricated) rear trunnion, and fire away.....

Recoil Springs -

Here are some recoil springs I turned:

The tiny left one is 0.024" music wire, which is too wimpy (when it tried to fight the AK hammer spring and close the bolt, it lost!), and the three on the right are 0.050" music wire, which are all too stiff (I can hardly pull the bolt back with pliers, and if I do, they permanently stretch out).

Springs get stiffer with thicker wire, *fewer* turns (shorter coiled section), or tighter turns (smaller diameter); they get floppier with thinner wire, more turns, and larger diameter.

Sadly, I don't have room to make the thick-wire springs any longer or wider. What I really need is some intermediate size like 0.040" music wire, and I've ordered some, but it'll be at least a week until it arrives.

On the other hand, this abomination works surprisingly well:

Yes, those are rubber bands.

Yes, it cycles.

Quite well, thank you!

Well, it took exactly two rounds of hot Bulgarian to start squashing my first, inadequate rear trunnion mount:

My pathetic (and ugly!) 1/8" rivets couldn't hold the 1/4" flat bar stock rear trunnion to the receiver, at least not under the pounding of hot Bulgarian Tokarev!

So I decided to make the rear trunnion from angle iron, where the bottom of the angle lays flat on the bottom of the receiver, and the other side sticks up and catches the bolt. One advantage of this is I can use the rear trigger guard rivet to hold down the rear trunnion, and eliminate the (increasingly scarce) pistol grip mini-trunnion and bolt with a simple tapped hole in the rear trunnion and some threaded rod.

I found some mild steel stock of just the right size--3/16" thick, 1.5" and 2" sides. It's an old bed frame, and check out the huge welded joints--that bed's not going anywhere!

Here's my failed second attempt at a rear trunnion, which clearly will not lie flat against the receiver bottom!

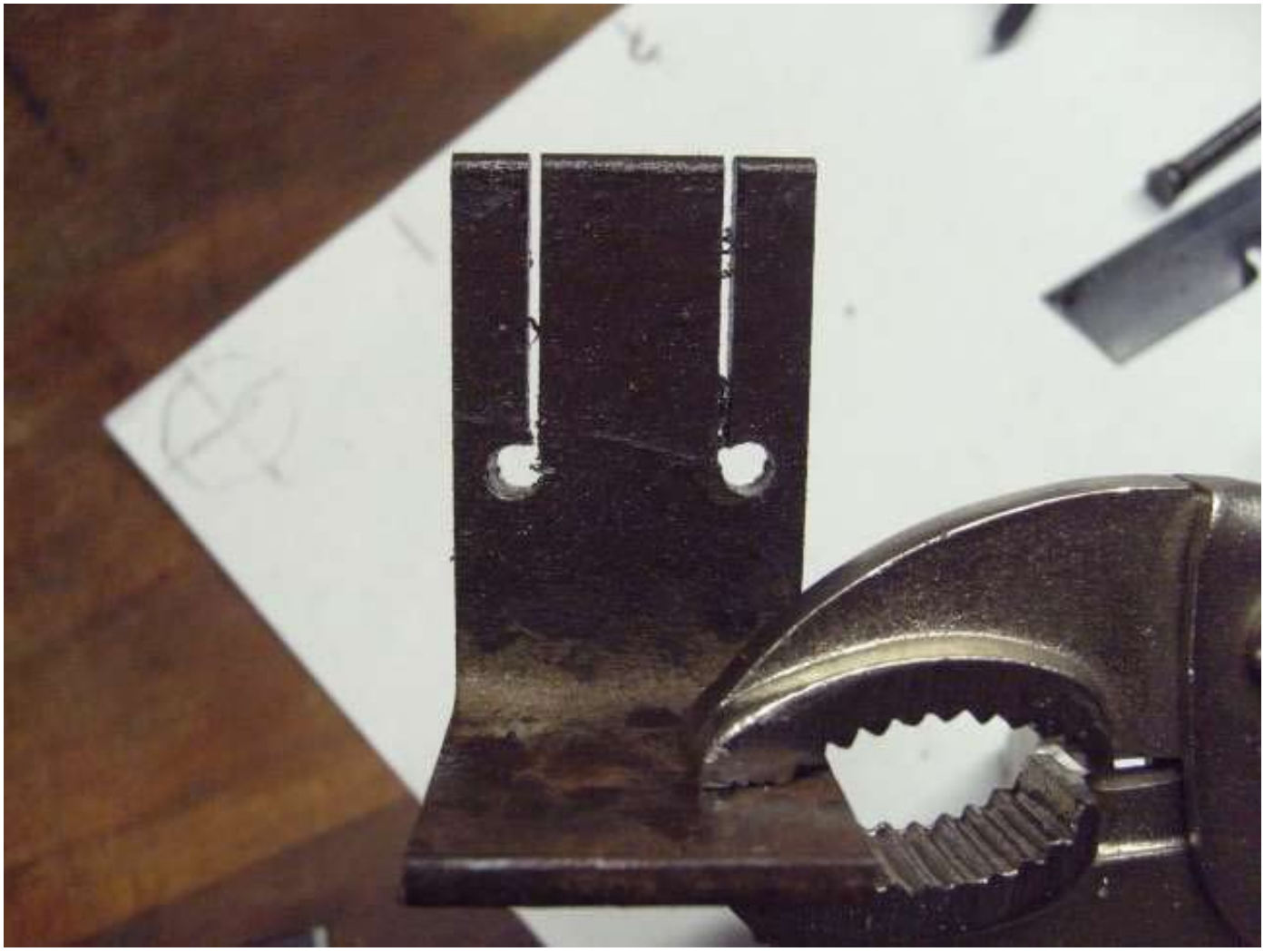
Note to self: the AK pistol grip slants *back*, not forward.

For my third attempt at a rear trunnion, I'm sticking with angle iron. I took this opportunity to streamline my trigger guard, which I'd previously made about 3/8" too long:

Here's my bag of 5/32" rear trigger guard rivets from Grainger - http://www.grainger.com

"Official" AK rivet sets are $10 per gun.

Grainger rivets are $7 for a bag of 500 rivets:



With the trigger guard done, I'm back to rear trunnion fabrication. I cut my angle iron at about 1.24" wide, then drilled and hacksawed out clearance for the bolt's sides.

I want radiused corners on the tab sticking up, because that tab is supposed to catch the firearm bolt--a high-stress operation!

Here's a bottom view of the rear trunnion with the side clearance completed. I've drilled the rear trigger guard rivet hole, and I'm tapping the pistol grip screw hole.

Here's the final rear trunnion installed in the receiver! A few more rivets, on the sides, would be a good idea for safety. As a bonus,after a bit of fitting the rear trunnion tilts the trigger/disconnector group just right for a much shorter and nicer trigger pull--my receiver "floor" was a bit too deep before I installed the trunnion.

Because the rear trunnion is fixed in place, the only way to remove the bolt is to take the front trunnion off, and slide the bolt forward out of the gun. The front trunnion's screws seem to hold it perfectly well, though, so this is probably a reasonable long-term plan. I'd been worried about having to fabricate an AK-style removeable bolt; this way I can leave my top rails wide and strong all the way along.

Here's the back of the gun, with bolt installed. The little cross-bolt is just for paranoia's sake, in case the new trunnion tears out like the old one.

Magazine Latch Troubleshooting:

So I messed up my first magazine latch.

The problem is that I carefully fit-and-filed the thing *before* drilling the hole for the latch pivot, and so inevitably the thing pivots around the wrong spot, and the magazine ends up hanging 1/16” too low.

1/16” is the difference between a round sliding up the feed ramp, and irrevocably jamming itself up against the feed ramp!

Magazine Latch

For my own future reference, the correct protocol for magazine latch fitting is:

1. Bend up the latch into basically the right space, leaving extra metal to be filed down later.

2. Drill the hole for the latch to pivot around.

3. Fit-and-file the latch so it holds the magazine in exactly the right spot.

4. Permanently rivet the latch in place, riveting through latch spring.

Don't try to do step 3 first!

So I've got to build a new magazine latch. I figured I'd try a new fabrication technique on my second latch.

Like before, I cut out the sheet steel stock with a jigsaw and folded it in my bench vice around a 3/8" bar stock mandrel. For the giant magazine-clearance holes, though, I'm cutting them with a jigsaw:

Making the cuts *after* folding is actually easier (because you can start cutting on the newly-created "edge"), and it keeps the holes from messing up the folding process.

Here's the completed latch, next to the old one which I filed too short.

After ten minutes of fit-file-repeat, the new latch holds the magazine beautifully!

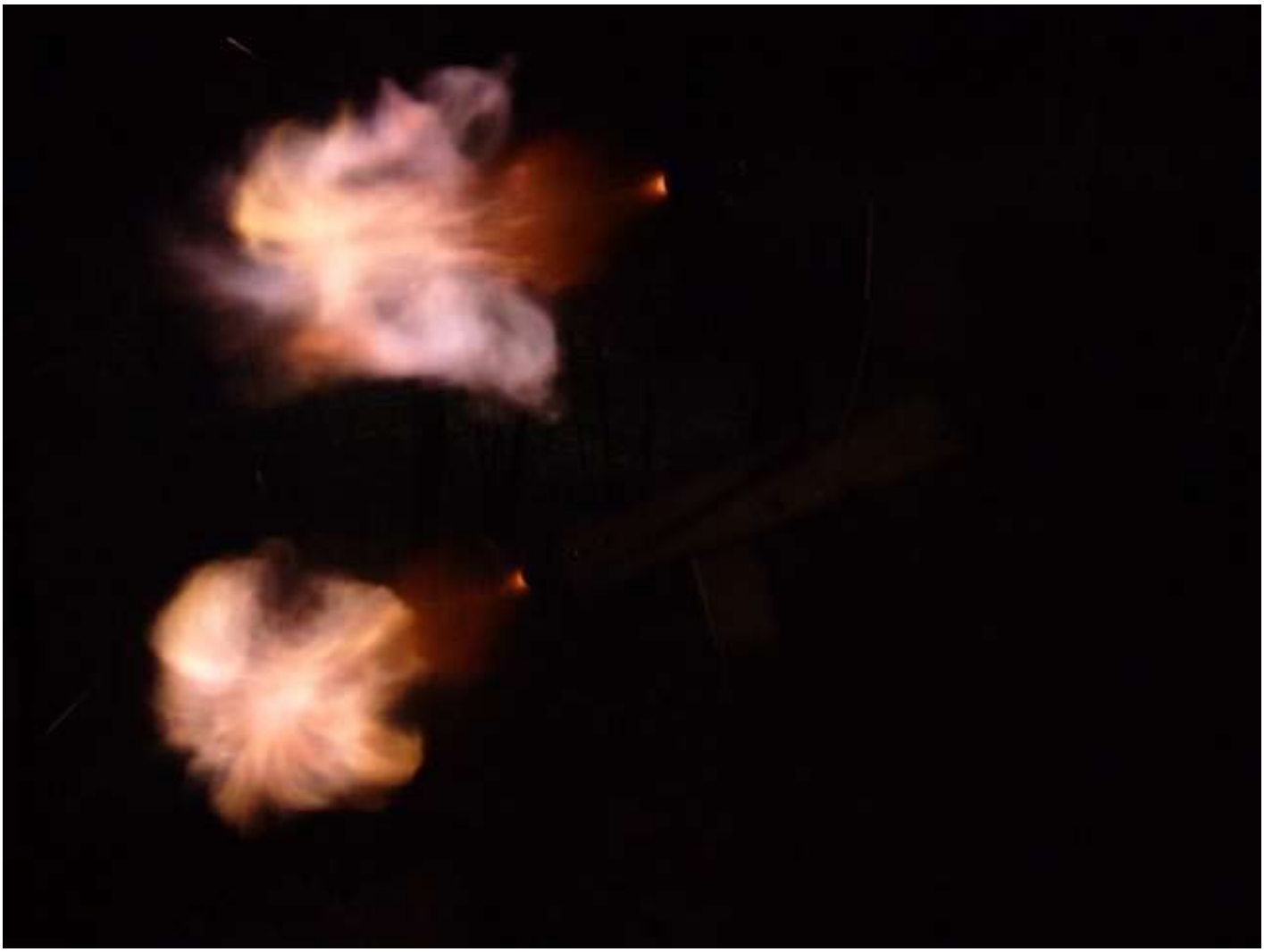
Here's my freshly-wound magazine latch spring.

Here's the completed gun, which is now fully operational.

I'm really happy with how the reworked trigger guard's lines flow into the mag latch's release button--and this was totally unintentional! (Still, somehow everything I fabricate ends up looking lumpy, er, "organic"!)

She came out at a hair under 4lb with an *unloaded* magazine, and she's closer to 5lbs while carrying 32 rounds of Tokarev.

I'm actually considering cutting down one of the magazines to 20rds to have the option of a smaller, lighter gun!



All the functional parts are now there.

To do: semi-auto test fire! (Man, I'm glad I can just walk out my back door and blam, tinker, repeat. I pity the poor folks who have to schedule a trip to the range for every test!)

Semi-auto, baby! Above is one four-second exposure:

It cycles *great*! Now I just gotta wait for daylight so I can sight 'er in!

Laminated Bolt Troubleshooting:

Tearing down my bolt for cleaning, I noticed a very spooky thing:

Those are the front and back screws that hold the laminations of my bolt together--apparently the force of Tokarev ignitions is enough to start shearing 'em (admittedly, they're quite wimpy). Maybe this is one reason why manufacturers always make firearm bolts from one solid piece of carbon steel?

I am happy these crappy mild steel bolts just slowly and very visibly mooshed, rather than the typical hardened steel behavior of invisibly cracking until catastrophic failure. Mild steel's slow, plastic deformation is actually pretty handy when designing a new mechanical system!

Unwilling to abandon the laminated bolt idea, I drilled two more holes in the bolt laminations and drove in sections of 1/4" tool steel rod to help fight bolt shear.

I'll let you know how this holds up.

Other than that, I've been doing the usual annoying end-of-project tweaking and tuning. I got a few feed hangups where the (floating) firing pin gets wedged sideways by the freshly-stripped round, so I decided to file out a little recessed pocket in the bolt face for the round to sit in.

The idea with the pocket is to give the firing pin more wiggle room to clear the incoming round. I'm clearly getting spoiled by my mill, because filing a flat level accurate spot by hand is sure tough!

This “pocket” idea didn’t help in any way with feed, possibly because I just wasn’t willing to file down a 3/16” hole in the bolt face (like an AK)!

Instead, I should have left the bolt face flat, because I ended up putting in a tiny spring to push the firing pin back, away from the bolt face. It wasn’t at all hard to use a dremil cut-off wheel to “mill” out clearance for a tiny 1/8” diameter spring to push the firing pin back.

This little spring seems to do a good job of keeping the firing pin from interfering with the feed process. I ended up using the same trick on my first .22 long rifle prototype, so I don’t know why I tried to skip it this time!

Anyway, I think I’m on track to have the weapon both looking good and working reliably.

Finished!

Here's my blowbAK pistol, which combines the unusable-due-to-922(r) AK parts (imported fire control group, pistol grip) and a scratchbuilt receiver, bolt, trunnions, magwell, trigger guard and latch to make a compact blowback semi-auto pistol.

On the next page you'll see a short first-person YouTube video of me burning off a few rounds rapid-fire. I ran out of "fireball" Bulgarian ammo, so the muzzle flashes aren't that amazing.

Why yes, those are still rubber bands (curse ye, slow parts shipping!), but they do work!

It's actually now fun enough to shoot that I'm going to have to start cleaning it!

I burned through about fifty rounds tonight, and the bolt and rear trunnion are still 100% solid now--both problems are confirmed solved! I didn't have any feed errors, but I did have a few problems with my new firing pin spring--it seems to be jamming up the firing pin now and then, meaning you've got to manually re-cock and smack it again.

Now that I'm off the hook for the challenge, I'll just mill out a perfect pocket for the firing pin spring, and try to come up with a better garage-friendly fabrication strategy. I'm still ticked off I didn't get the wire in time to fabricate a decent-looking recoil spring (rubber bands?! noooooo!!!), but that's the way it goes.

For Version 3, I'd like to Add:

- A safety (!!) and a bolt-hold-open, probably the same device.
- An extractor, to allow unloading without a bang or a screwdriver. (Amazingly, for normal firing an extractor was totally unnecessary in this blowback build!)
- Sights!
- A flat sheet metal cover over the bolt to keep crap out.

I'm also thinking about a mag-through-handguard Uzi-style version, possibly with a two-finger push-pull trigger for rapid fire.

Man, building guns is fun!

More FAQ's:

It's not the rubber bands that stop the bolt, it's the rear trunnion--same deal with most short-bolt-travel pistols. The rubber bands are just the recoil spring. And it's not visible in the movie, but I'm pretty heavily up-armored while test-firing any new gun (thick lexan face shield over safety glasses, thick leather over hard body armor), and that's only after a couple dozen rounds of remote firing followed by a close inspection for signs of stress.

Regarding the bolt, I also agree 100% that cro-moly mid-carbon steel (e.g., 4130 or 4140) is the right material for properly engineered production firearms. But that's not what we've been building! For prototypes, where you're not totally sure of the forces involved, you want to *see* weak parts bend, and mild steel is darn good at that!

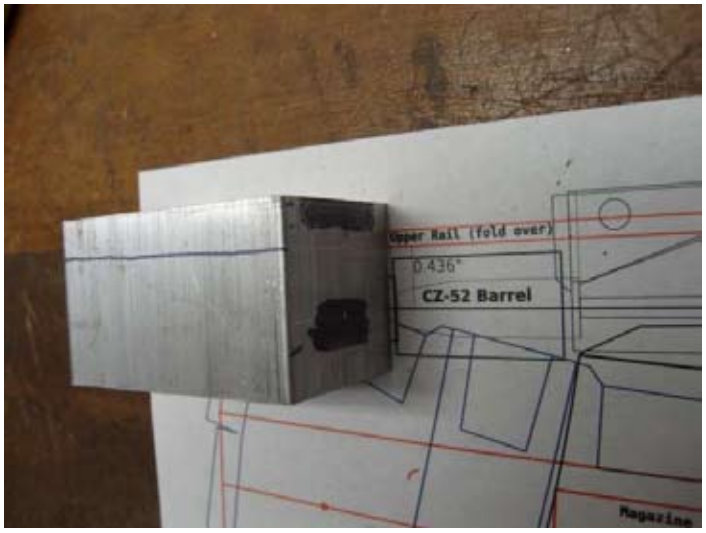
I actually feel a lot more comfortable with a device made from malleable steel that will safely deform to 20%+ elongation, than highcarbon steel which can suffer explosive brittle fracture after an improper heat-treat (e.g., from welding) or in-service work-hardening.

In other words, for prototypes I want toughness, not hardness. I'm thinking of building version 3 from 304 austenitic stainless, which can survive 60%+ elongation (in addition to being more durable with corrosive ammo!).

The bottom line is you need to be dang sure that what you're firing is safe (whether or not you built it yourself!), and protect yourself so you'll be uninjured even if something does break loose.

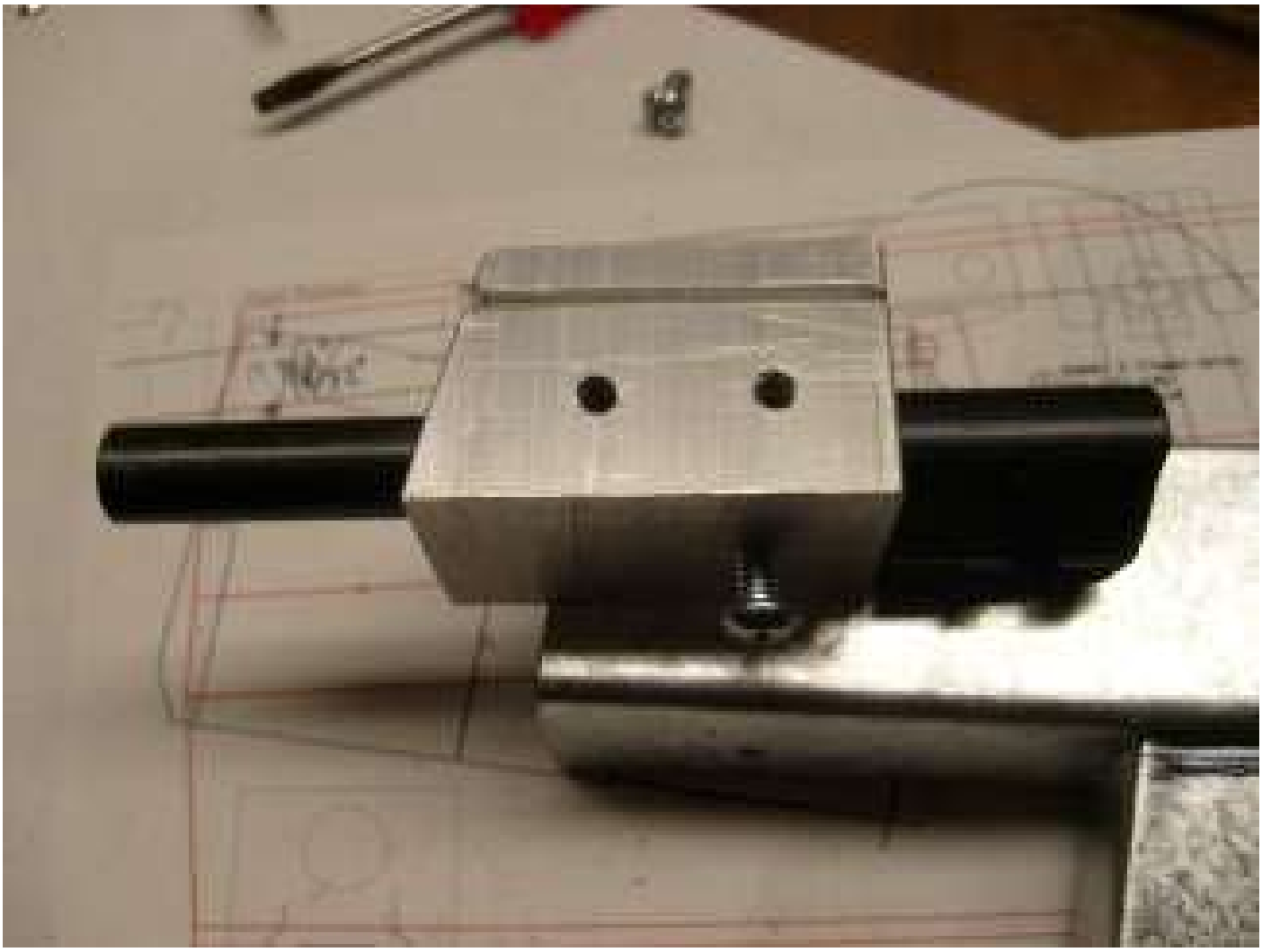
Orion, would you be willing to give more of the details regarding you're aluminum trunion? How is it holding up? Do you have any more specs or pictures regarding it's construction?

Sure, JK! The front trunnion is just an aluminum block, 1.25" x 1.25" x 2", with one big 15/32" hole for the barrel, two hacksaw-cut slots to line up the trunnion on the receiver rails, four tapped #10 machine screw holes to hold the trunnion to the receiver, and one machine screw on the bottom to hold the barrel in place.



Four crappy imported #10 machine screws seem to work fine to hold the front trunnion on--I haven't seen any deformation there.

In a blowback firearm the bullet and bolt, not the front trunnion, soak up most of the force during firing. There is a little bit of pressure from the case shoulder in a bottlenecked round, and some friction from the bullet's passage through the barrel, but nothing like the steel-squishing tons of force experienced by the bolt!



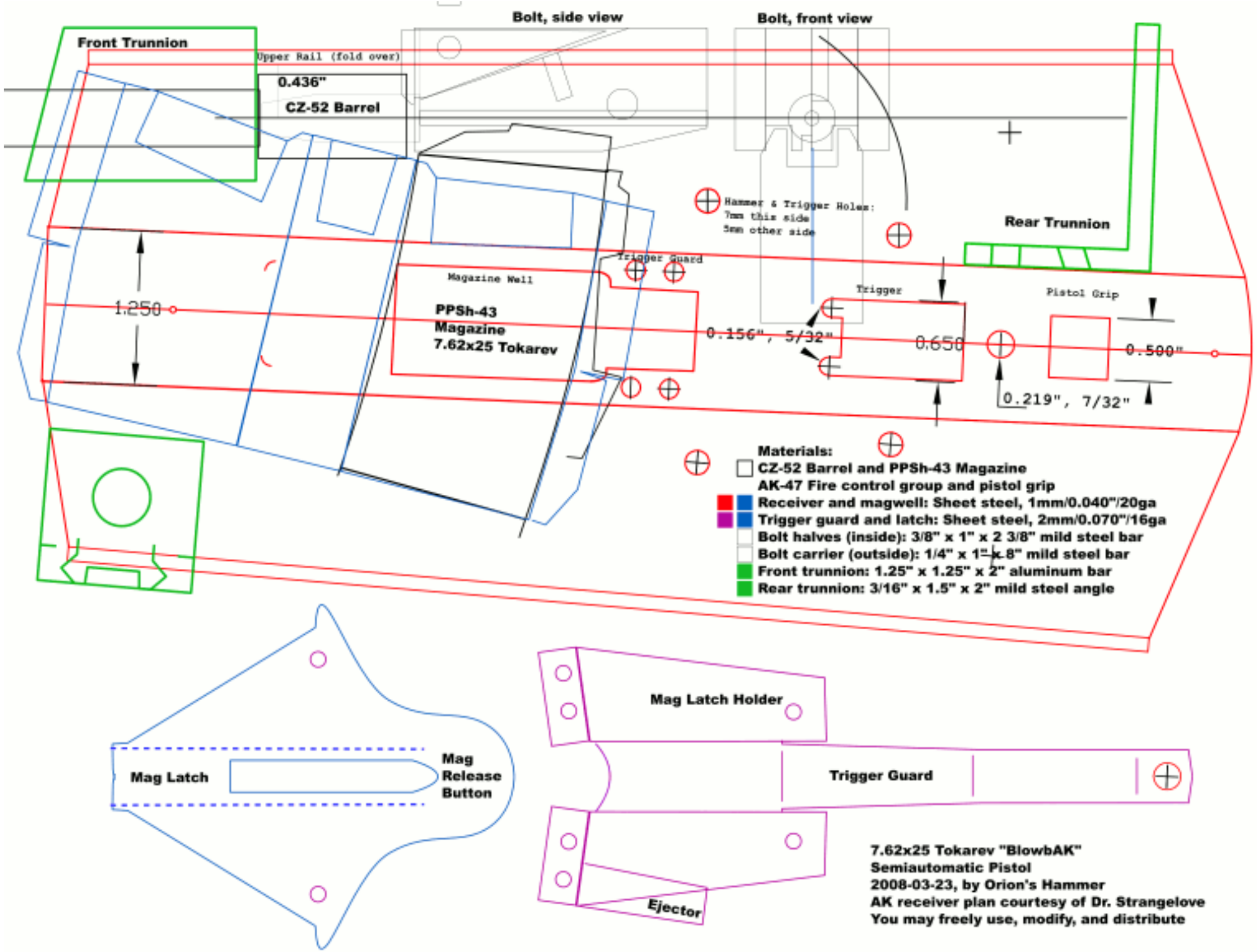
Oh, and the big aluminum block seems to act as a pretty efficient heatsink during rapid-fire!

I keep meaning to cut a Picatinny rail into the top of the front trunnion, where it'd always be perfectly aligned with the barrel.

And I gotta credit Steve of www.homebuiltfirearms.com for the aluminum-trunnion idea--it's a good material for this!

The Plans:

On the next page you will find Orions' blueprints. As per his instructions, you simply need to print these, cut them out, and glue them to a length of sheet metal.



7.62x25 Tokarev "BlowbAK"
Semiautomatic Pistol
2008-03-23, by Orion's Hammer
AK receiver plan courtesy of Dr. Strangelove
You may freely use, modify, and distribute

The first thing you notice when you look at the original Orion AK planset is that we have a LOT going on in one page. Orion has wisely color-coded each of the parts. so if you print 10 color copies of the previous page, you will have a separate sheet for each part, with a few left over for mistakes. As you can see in his design-build process, he has printed each of these pages, glued them to a sheet of steel and then cut out the piece according to the template. This process is very effective, and it is one that I recommend to you.

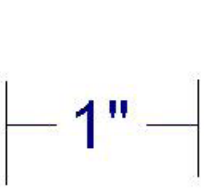
In the following pages I am going to break down this seemingly disordered and jumbled planset so you can see the detail of each of the components, and review with you how each of these was created. Again, the procedure is peel-and-stick; cut out the template, attach it to the sheet metal and cut the steel piece out.

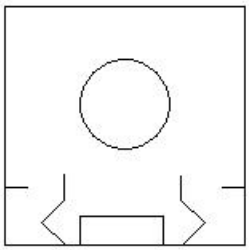
While it may not initially appear so, this planset is pure-genius, and in one page Orion accomplishes many, many tasks. Our job is to look closely not only at the parts, and the specs recommended for each part, but also at the hidden features of the planset.

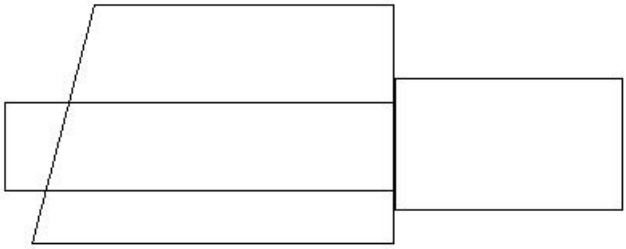
What do I mean by "hidden features"? Well, Orion uses this blueprint as a way to illustrate how the various pieces and internal parts all lock up together. Imagine being able to see through the AK pistol before you build it - to see exactly how the magazine, magazine well, bolt and barrel all meet together within the pistol. When you look at the exact placement of each of these parts on the plan, you can see that this is what Orion is also accomplishing, and what we will examine here.

Again, to be clear, the individual pieces and parts that follow have been created based on Orion's design, and you can peel-and-stick these as well. Each piece is to scale and is ready to be attached to a piece of metal.

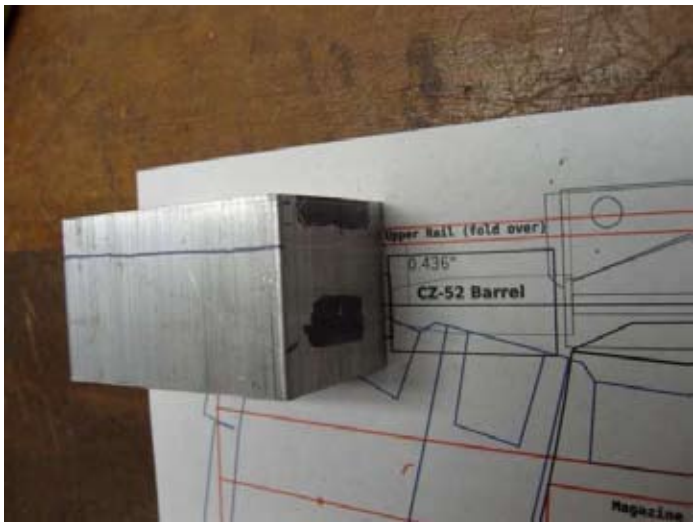
If you ever have a doubt about the size of a piece or part - look the the original Orion plan, and put your ruler or measuring tape or caliper over a listed dimension. The width of the receiver, for example, is 1.250 inches wide. Compare the piece you are wondering about to this dimension, and you will know exactly what size it should be.

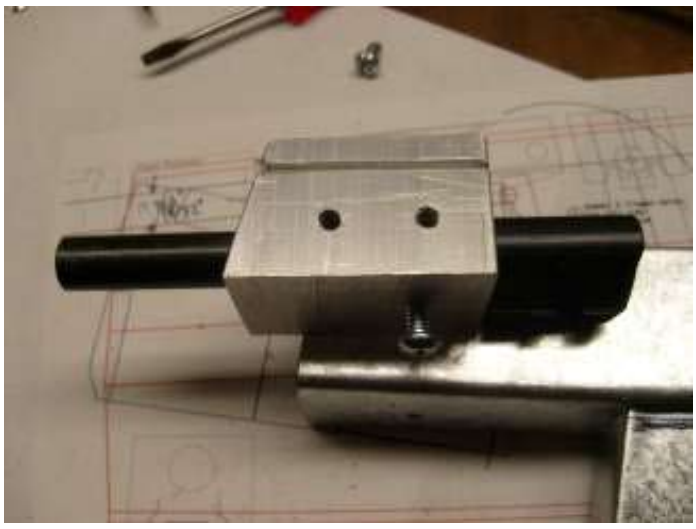


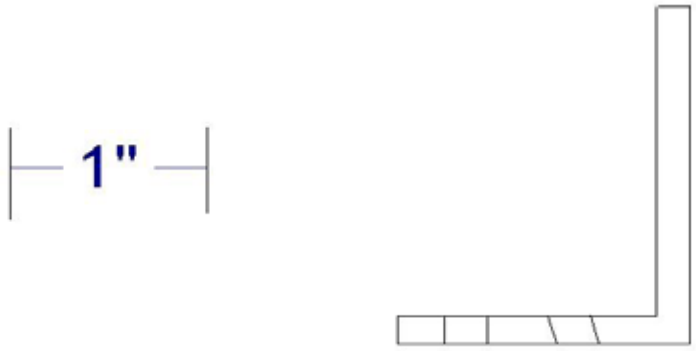




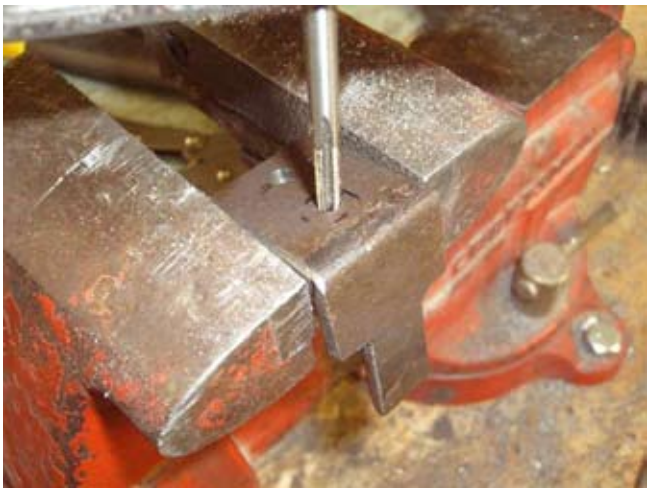
Part: Front Barrel Trunnion
Made From: 1.25 inch x 1.25 inch x 2 inch Aluminum Bar
Planset Color: Green
Function: The front barrel trunnion serves to attach the barrel to the receiver and hold barrel in place during firing sequence.

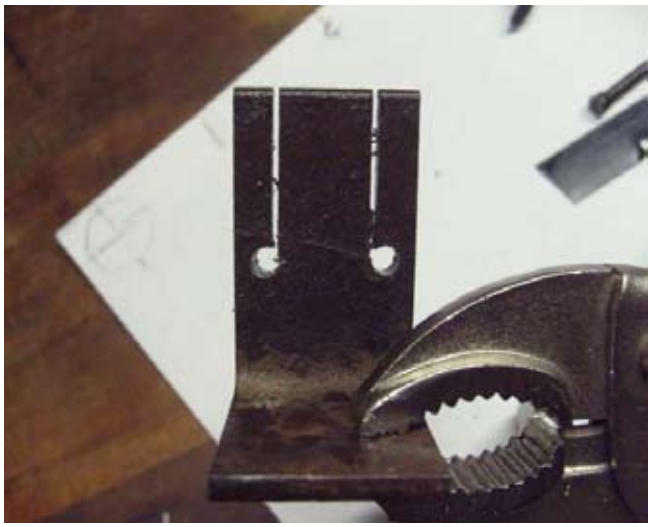


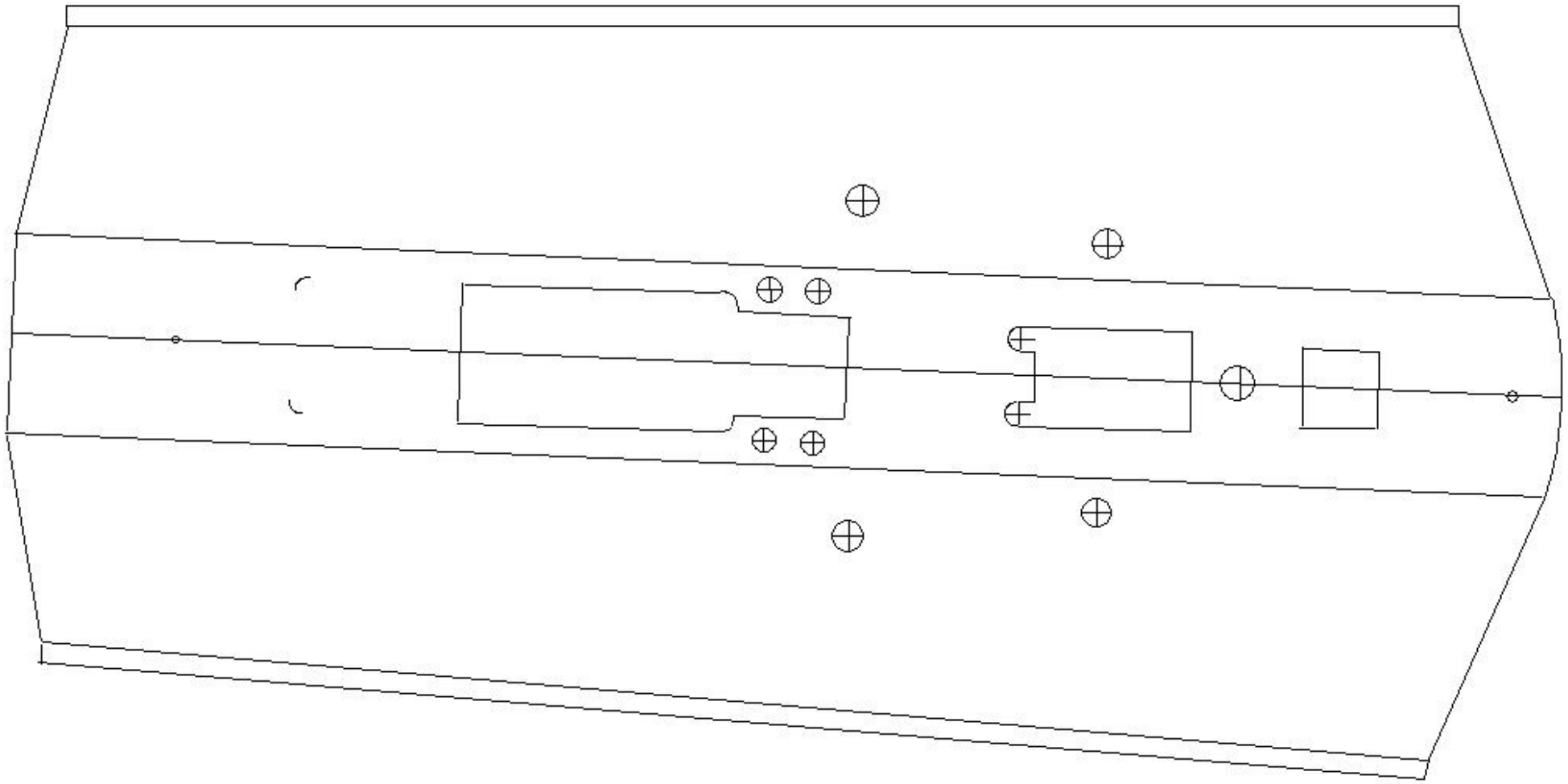




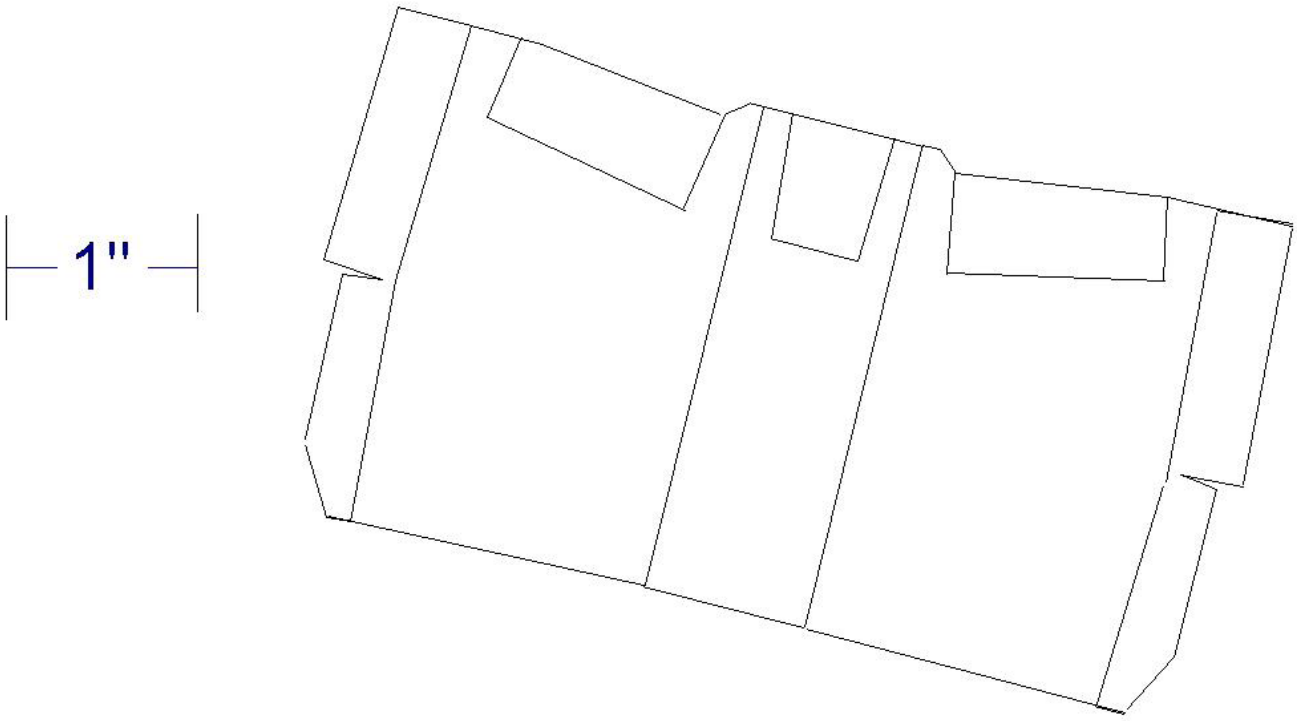
Part: Rear Trunnion
Made From: 3/16 inch x 1.5 inch x 2 inch Mild Steel Angle
Planset Color: Green
Function: The rear trunnion serves as a safeguard to ensure that no portion or part of the bolt is pushed off of the receiver during the firing sequence.



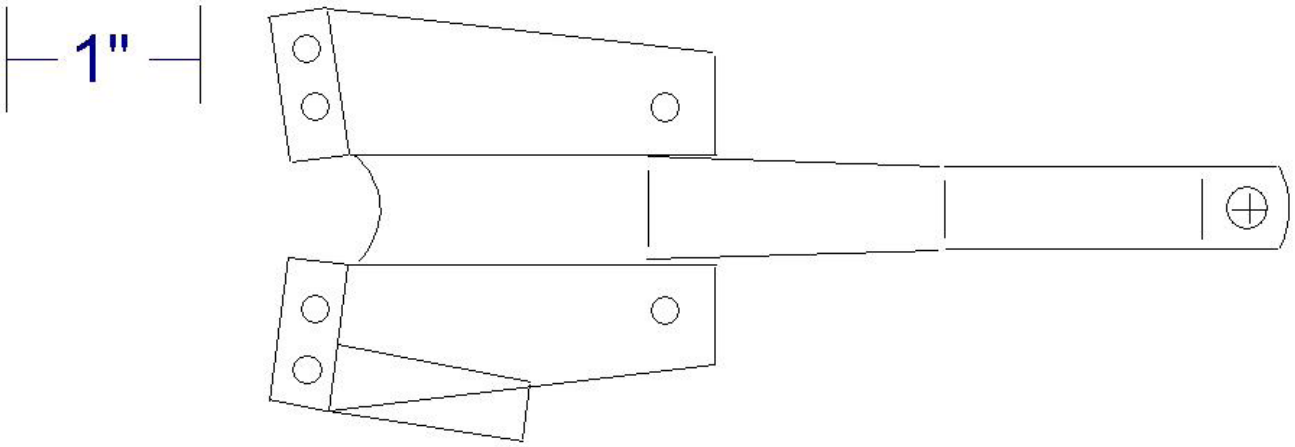




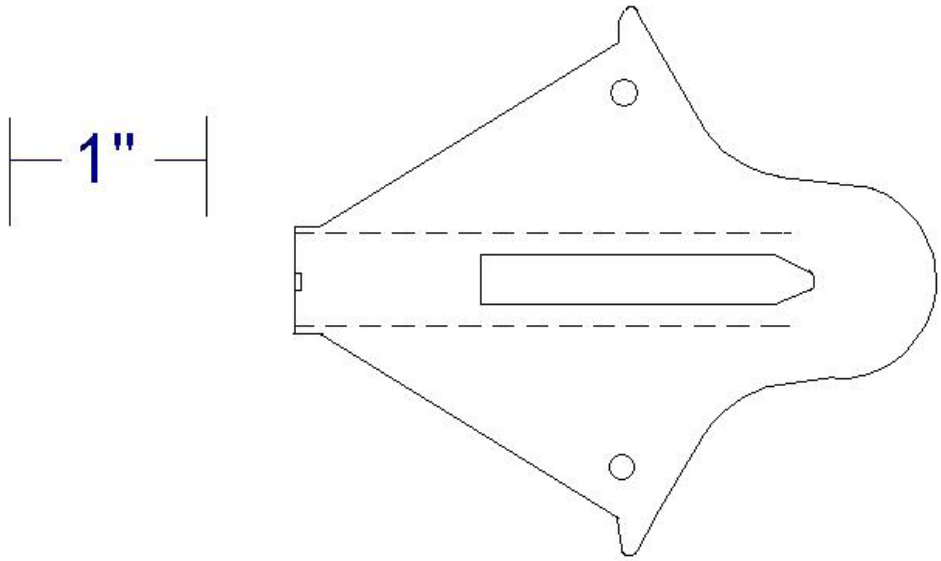
Made From: Sheet Steel 1mm or 0.040 inch or 20 gauge
Planset Color: Red
Function: The receiver on any firearm is the one piece to which all others are mounted. Orion's design is no different; all components are, in some form or fashion, attached to the receiver.



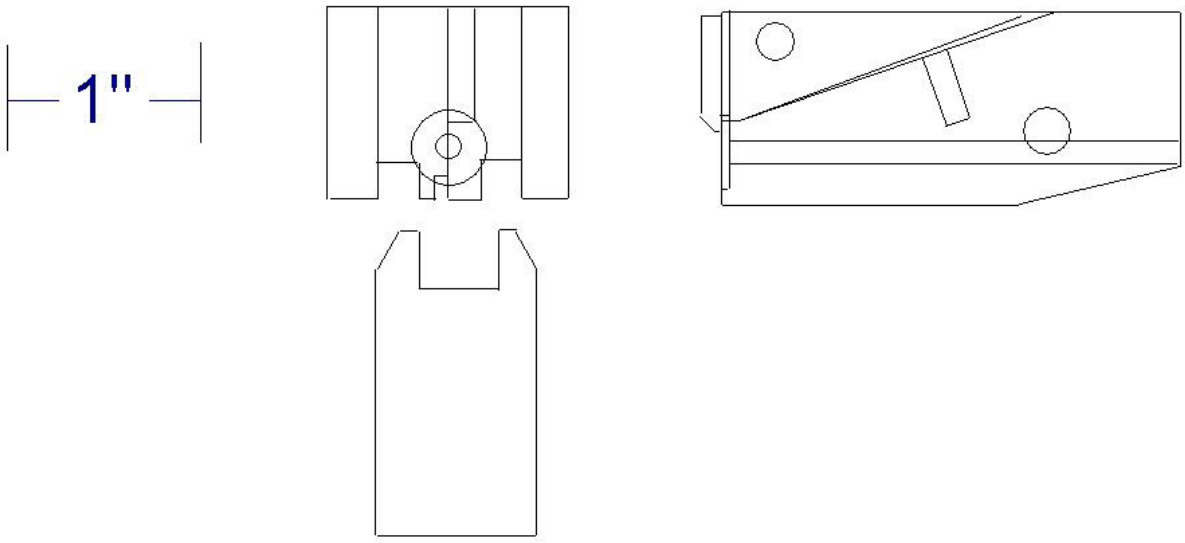
Part: Magwell - Also Called Magazine Well
Made From: Sheet Steel 1mm or 0.040 inch or 20 gauge
Planset Color: Blue
Function: The magazine well holds the magazine in place, and properly aligns the magazine so that the bolt can strip bullets from the magazine and feed them, one by one, into the barrel.



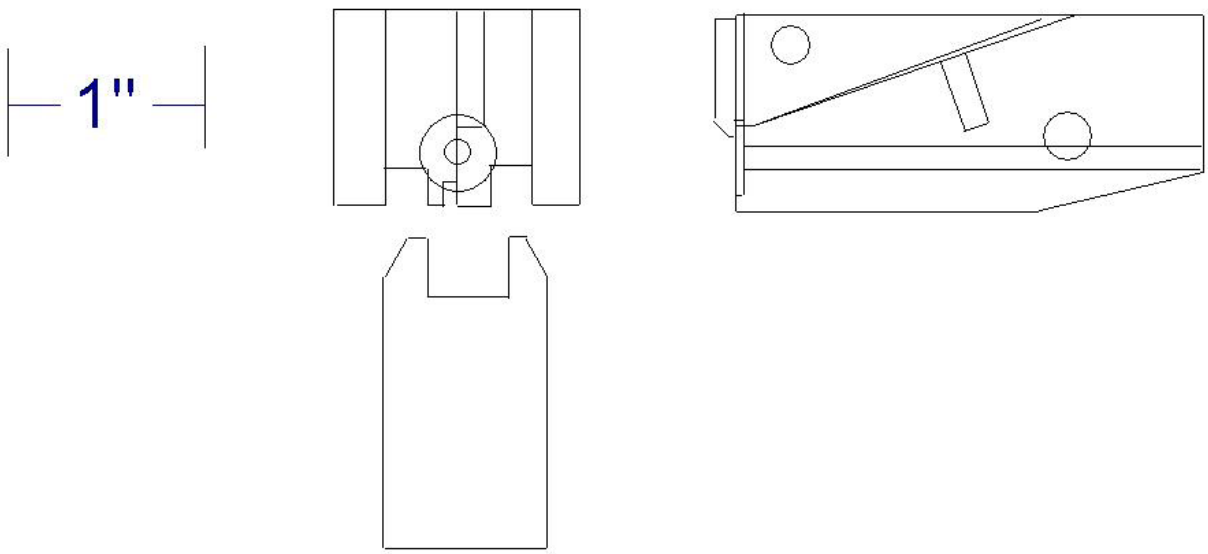
Part: Trigger Guard and Mag Latch Holder
Made From: Sheet Steel 2mm or 0.070 inch or 16 gauge
Planset Color: Purple
Function: These two pieces are formed from a single sheet of steel. Once bent into shape, this single-piece will both protect the trigger and will act as a mounting surface for the Magazine Latch.



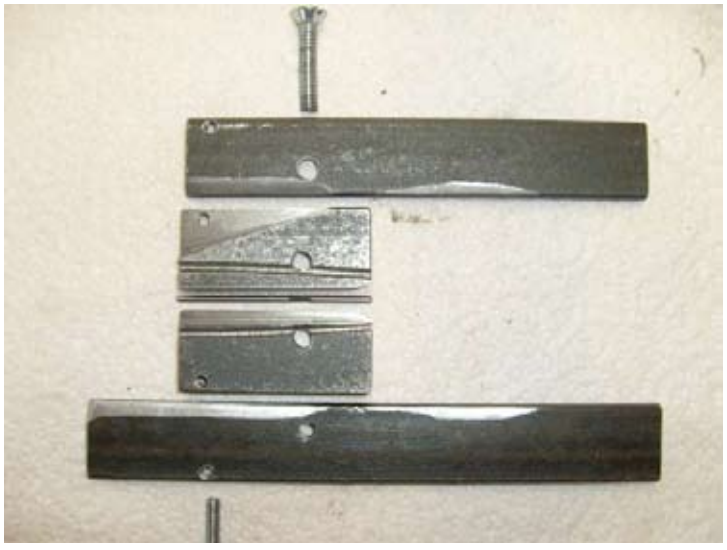
Part: Magazine Latch
Made From: Sheet Steel 2mm or 0.070 inch or 16 gauge
Planset Color: Blue
Function: The magazine latch mounts directly inside the Mag Latch Holder, and the latch itself holds the magazine in place.

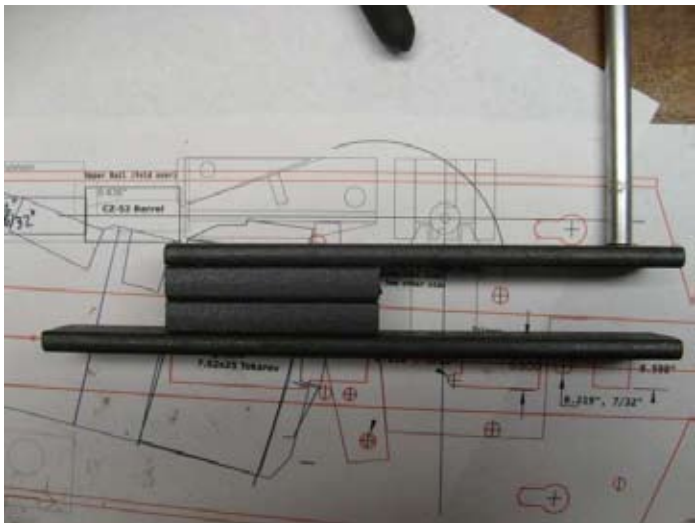


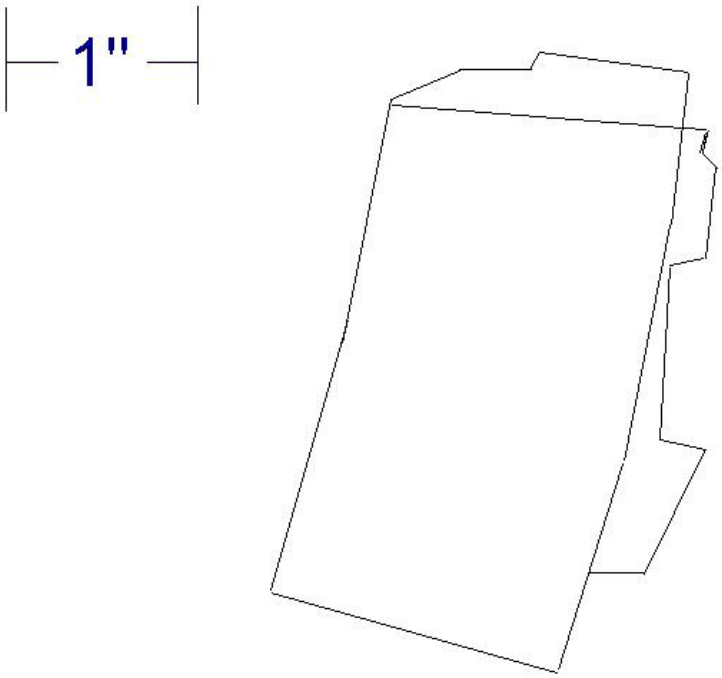
Part: Bolt - Bolt Halves (Inside)
Made From: 3/8 inch x 1 inch x 2 3/8 inch Mild Steel Bar
Planset Color: Grey
Function: Bolt will strip bullets from magazine, feed them into barrel and then hold the bullet in place as the firearm discharges. After discharge, brass casing will push the bolt back, and enable the next bullet to be stripped from the magazine and then be fed into the barrel. The inside bolt halves act to hold the firing pin, and are the specific pieces that strip the bullet from the magazine and push the bullet into the barrel.



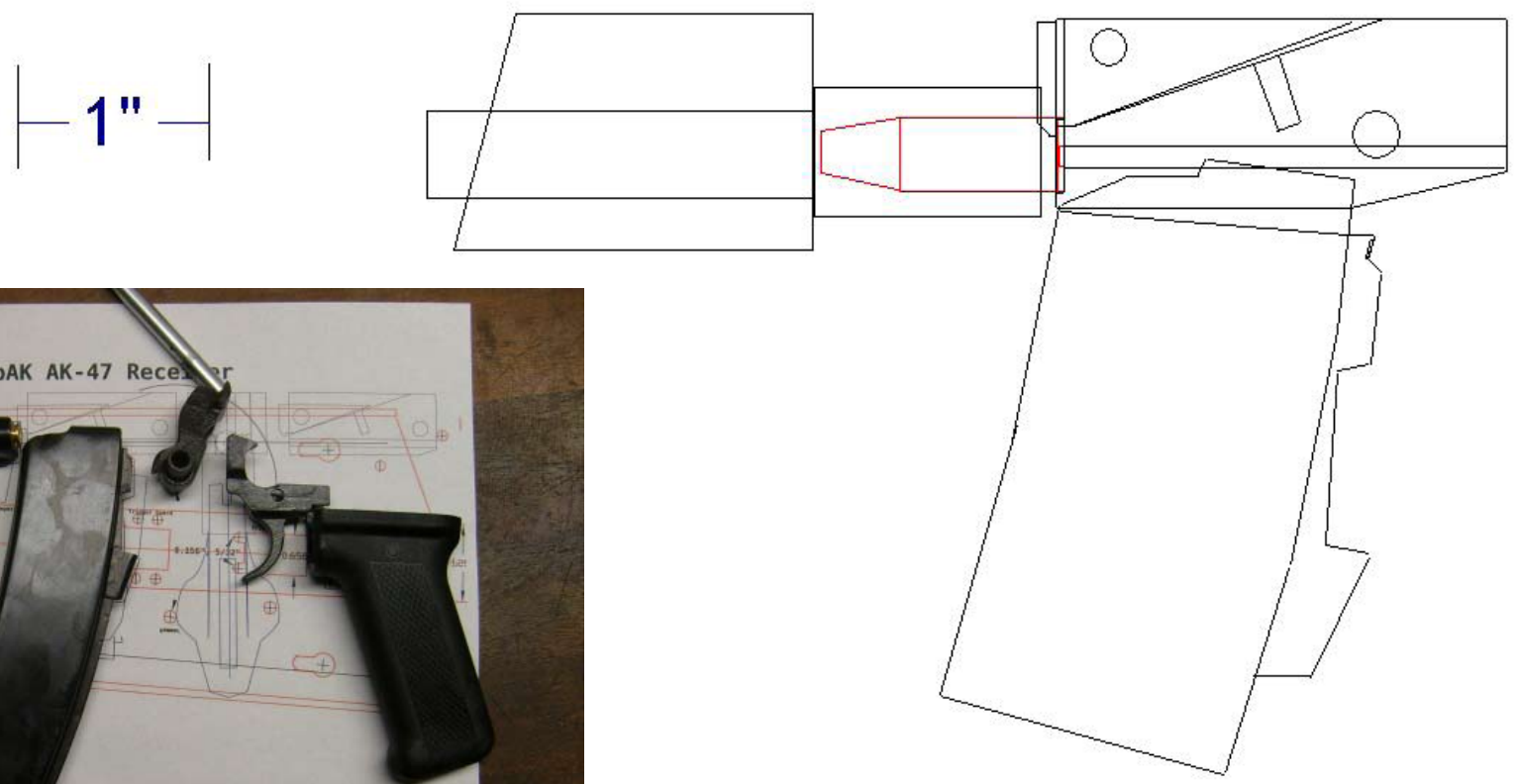
Part: Bolt - Bolt Carrier (Outside)
Made From: 1/4 inch x 1 inch x 8 inch Mild Steel Bar
Planset Color: Grey
Function: Bolt will strip bullets from magazine, feed them into barrel and then hold the bullet in place as the firearm discharges. After discharge, brass casing will push the bolt back, and enable the next bullet to be stripped from the magazine and then be fed into the barrel. The outside bolt carrier halves act to hold the inside bolt halves in place, and they slide back and forth on the rails of the receiver.







Part: Magazine
Made From: 35mm x 16mm tube or 16 guage tubing
or Sheet Steel 2mm or 0.070 inch sheet steel or 16 gauge sheet steel
Magazine Spring made from 20-gauge piano wire.
Planset Color: Illustrated in grey, (front view) and black, (side view).
Function: Hold bullets in reserve and feeds them, one at a time, into the barrel. Bullets are stripped from the magazine by the bolt.



Part: Complete Action Lockup
Made From: Bolt Side View, Barrel and Front Trunnion, Side View Magazine
Planset Color: Grey, Black and Green
Function: Illustrates exactly how the magazine, magazine well, bolt and barrel all meet together within the pistol. Bullet is illustrated inside the barrel, to the front of the bolt.

The Skorpion:

OK - So we have come to the end of Orion's description of the World's Greatest Homemade Firearm - the 9mm AK-47 pistol. Now - remember in the very beginning, when I asked you to set aside all of that information you have already learned about firearms, the military and guns in general?

Well - I know for a fact that a few of you haven't done that. In fact, right now you feel cheated - you are saying things like "That's not a real AK-47" and "You didn't build an AK - Orion built a Skorpion".

Let's return to a comment I made earlier in this article: An AK-47 is an AK because it is built on an AK-47 receiver. Just to set the record straight - Orion's AK pistol is just that - an AK pistol. A Skorpion pistol - while similar in appearance- is not an AK-47 pistol.

For those who have no earthly idea what I am babbling about - let's take a quick look at the Skorpion pistol, (you've already read enough about the AK47 to know what it is).

Here you can see them side by side - the 9mm AK pistol on the left, and the 9mm Skorpion Pistol on the right.

The Skorpion is a light automatic pistol whose design falls somewhere between the UZI or MAC10 machine guns and the Glock 18 or Beretta 93R selectable auto-fire pistols. It was developed by the Czech technical designer Miroslav Rybar and began its manufacture in the early 1960's under the regime of the Czechoslovak Socialist Republic. It has been used by the armies of the Eastern Bloc, it was supplied from Moscow to rebels as well as socialist regimes in Africa, and found its way into the hands of European terrorists who favored its compact size for concealment. Perhaps its greatest notariety came with its use by the "red brigades" in the kidnapping and murder of Italian prime minister Aldo Moro in 1978. After the collapse of the Eastern Bloc the pistol continued its popularity with the emerging criminal element.

It was reported that the various secret police agencies of the Warsaw Pact were also fond of the Skorpion, as were the American CIA and British MI-6.

Originally designed to fire the .32 ACP round, many felt that the round was too light, and successive models were designed in several other popular semi-automatic calibers, namely the .380 ACP, 9mm Makarov and 9mm Parabellum.
The original Czech model vz.61 uses the relatively weak .32 ACP cartridge, so it employs a simple blowback principle to operate.

The gun features ambidextrous cocking consisting of two small button-shaped handles on each side of the receiver. The safety/firing mode switch is located at the left side above the firing handle. The gun can be fired in single shots or in full auto. To decrease the rate of fire to a practical rate, the vz.61 features a rate reducer located in the handle that catches the bolt in the rearward position for a small amount of time after the each shot.

Today, commercial semi-automatic copies of the Skorpion are produced by both Europian and American manufacturers alike.

If you would like to learn more about the Skorpion pistol - visit this site:

http://www.genitron.com/unique18.html.

For me it comes down to a simple description of the two weapons:

Orion's AK47 pistol is a short barrel firearm, has no stock, and is built on an AK-47 receiver, (pictured below right).

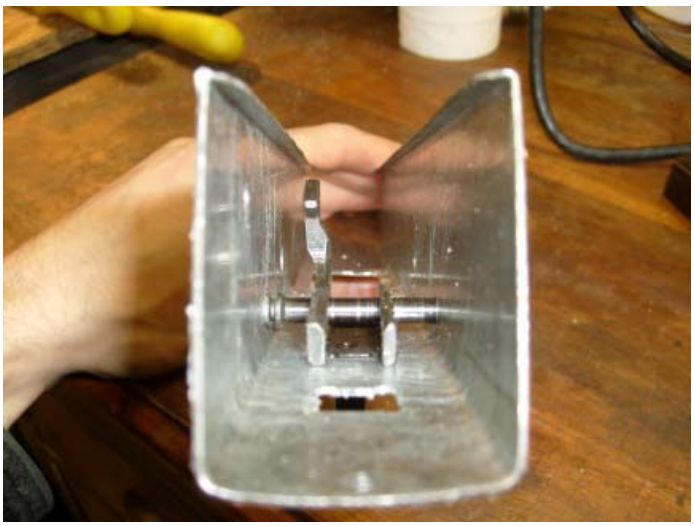
A Skorpion is also a short barrel firearm, it may or may not have a stock and is built on a Skorpion receiver, (pictured below left).

As you can see, the two receivers are very different. To build a Skorpion, you need a milling machine. To build an AK47, specifically, Orion's AK pistol - you only need to be able to bend some sheet metal and follow his instructions.

Thus - for me, the debate is over. It rests in the above description of the weapons.

Orion's AK pistol and the Skorpion are similar looking, and both can shoot a 9mm cartridge, (among others). However, only the Orion model is a genuine AK - because it is built on a sheet metal AK-47 receiver, and not a milled Skorpion receiver.

Thus, Orion is showing us how to build an AK47 pistol, and not a Scorpion pistol.



While they may look alike and fire the same cartridge, the Skorpion can only be made with a milling machine and lots of complex machining. Orion's AK, on the other hand, can be made with a single sheet of pressed steel and a minimal amount of skill.

9mm Conversion:

The ***next*** group of people that are unhappy with me are those who have yet to see the 9mm version of this AK pistol. They are grumbling things like "Hey, you said this thing would be 9mm, or 9x19mm - Orion never spoke of a 9mm version of his AK pistol - he discussed only two calibers in depth - .22 Long Rifle and 7.62x25 Tokarev. So what gives? You LIED to me!"

Well, I am glad you are paying attention! Very happy to hear you are awake and alive and so let's talk about converting this amazing design to shoot 9mm.

Believe it or not, only minor modifications needed to convert Orion's AK to shoot 9mm. As we explore the topic of caliber conversion, it is important to keep several things in mind. First, the Orion design is VERY robust. It is built on an AK-47 platform, and as we have previously discussed, the AK rifle, while normally chambered in 7.62x39, has also been chambered in everything from .22 Long Rifle up to 12 gauge shotgun.

Next, keep in mind this is a conversion from 7.62x25 Tokerev to 9x19mm; these two calibers are very similar when it comes to ballistics. Thus, when we discuss making the leap from 7.62Tok to 9mm (a slight change) on an AK-47 pistol, (a very robust platform that has already proven itself with many, many calibers), we are not talking about anything drastic.

Not only are these two rounds similar in size, when you examine the ballistics, they are very similar. To the right you can see both the 9x19mm - commonly known as the 9mm and the 7.62x25 Tokerev.

In this picture, the 9mm is on the right and the 7.62x25 Tokerev cartridge is on the left.

Ballistics Comparison:

For the sake of illustration, let's look at these two rounds, side by side.

7.62x25 Tokerev:

The 7.62x25mm Tokarev cartridge is a bottle-necked pistol cartridge widely used in former Soviet and Soviet satellite states.The cartridge has an average muzzle velocity of around 400 metres per second (1,300 ft/s), and has about 600 joules (440 ft·lbf) of energy.

Here are some examples of the ballistics of the 7.62x25 Tokerev:

85 grain Jacketed Hollow Point bullet travels 1,230 feet per second
90 grain Full Metal Jacket bullet tavels at 1,340 feet per second
85 grain Full Metal Jacket bullet travels at 1,650 feet per second

9mm - Technically known as 9x19mm

The 9x19, also called the 9mm Luger or the 9mm Parabellum, was adopted by the German Army in 1908 as the cartridge for the famous Luger pistol. It has become the world's most popular pistol cartridge. It is now used by most of the militaries of the world, including all of the NATO countries, and also a great many police agencies.

The 9x19 is one of the best auto pistol cartridges for long range shooting.

The 9x19 uses standard .355" bullets, generally from 100 to 147 grains in weight. The standard NATO load uses a 124 grain FMJ bullet. The reloader can do quite well with the 9x19. There are plenty of .355" bullets available, and a number of common powders that work well in the cartridge. These are primarily medium burning pistol powders such as Unique, HS6, HS7, and Blue Dot.

The various 115 grain Jacketed Hollow Point (JHP) bullets are generally the top choice for civilian personal defense, while the 124 grain bullets usually provide the best all-around performance.

Here are some specific examples of 9mm loads:

115 grain jacket hollow point bullet - muzzle velocity of 1155 feet per second.
124 grain bullet - muzzle velocity of 1159 feet per second.
147 grain Speer bullets can be driven to a muzzle velocity of 845 feet per second.

As you can quickly see - the 9mm shoots a heavier bullet, but it is going slower. The 7.62Tok round is smaller, but is much hotter - it travels faster than the 9mm round. However, the mid-range for both rounds is right around 1000-1300 Feet Per Second, and the weight of the bullet is typically between 80-120 grains in weight.

Ballistically speaking, these are mild differences, especially when launched from a heavy-weight platform like the Orion AK-47. Once again, here are the two rounds, compared ballistically, side by side:

7.62x25 Tokerev:

85 grain Jacketed Hollow Point bullet travels 1,230 feet per second
90 grain Full Metal Jacket bullet tavels at 1,340 feet per second
85 grain Full Metal Jacket bullet travels at 1,650 feet per second

9mm:

115 grain jacket hollow point bullet - muzzle velocity of 1155 feet per second.
124 grain bullet - muzzle velocity of 1159 feet per second.
147 grain Speer bullets, muzzle velocity of 845 feet per second.

So...If this is so simple, has this conversion been done before?

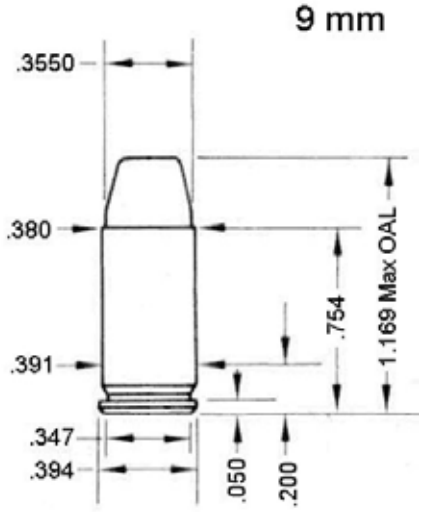
These two rounds are so similar that other firearms have routinely been converted from 7.62x25 to 9x19, or 9mm. Some very common examples include the CZ-52 IIRC, the Tokarev (TT33) and the Polish Wz48.

The only thing you need to to in order to convert these pistols is to replace the barrel. Believe it or not, the 9mm round will fit into the existing 7.62x25Tok magazine. The existing slide will chamber and fire a 9mm round. The Germans converted thousands and thousands of the Polish Wz48 pistols to 9mm. That's right - no difference except the caliber. Same recoil spring, same magazine, etc.

There is a "modern" pistol chambered in 7.62x25--the Zastava Model 57., (pictured above on the left). The only change in the pistol when converted from 7.62x25 to 9mm is the barrel. The 9mm functions just fine with the standard CZ 52 magazine.

To the right you see the the Tokarev TT33-D pistol, originally chambered in 7.62x25 Tokerev. Again, when converting to 9mm, the only thing you must change is the barrel. However, it is common to also use a modified magazine in which a spacer has been added as the 9mm cartridge is not as long as the 7.62x25 Tokerev cartridge.

So if the only thing you MUST change is the barrel, what does it look like when you stuff a 9x19mm cartridge into a magazine that was originally created for a 7.62x25mm cartridge? In the above illustration, you can see that the combination certainly will work, but you will have some room to spare. Often manufacturers will produce a spacer to "fill in" the extra room on the magazine, and avoid any potential feeding issues with the 9mm rounds. Even without a spacer, Wolf 115 grain FMJ 9x19 feeds just fine out of a CZ-52 7.62x25 magazine. Lower left you can see the exact dimensions for a 9x19mm cartridge. Lower right illustrates how a standard 7.62x25 round looks in the magazine.



Converting the Orion AK To 9mm:

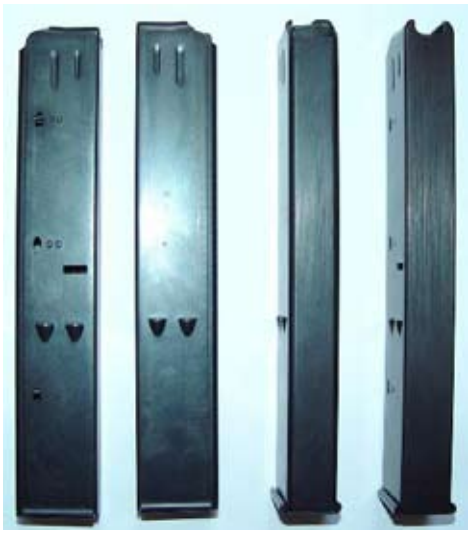
To convert the Orion design, you will need to use a 9mm barrel. I would also advise that you use a 9mm magazine, (though you certainly could use the same magazine that Orion is using - as can be seen in a previous illustration, as this WILL work).

I would also recommend that you use a slightly modified magazine well. If you are using a different magazine, you may also need to slightly modify the magazine catch, as the existing design may not lock in your magazine.

Now, that said, I would not recommend any changes to the magazine catch until you have created the receiver and magazine well, and can determine the exact placement of the magazine relative to the bolt and barrel. Once this has been determined, then create the magazine catch so that it will lock your magazine in the correct location. Again, if you have any questions about this, create the magazine catch as per Orion's design, and then make a second catch based on your own needs.

Thus, to change these two calibers, one need only replace the 7.62x25 Tokerev barrel with a 9mm barrel. Next, a slightly different magazine well will need to be used, (depending on the kind of magazine you choose to use - more on that later). And, if you are going to use a different magazine containing 9mm ammo, you will need to use a slightly modified magazine latch in order to hold that magazine in place.

Why is this really necessary? Well, when you look at the types of 9mm magazines in the following pages, they are straight, and have no curve. A straight magazine is inserted at 90 degree angle into the receiver so the magazine well must be slightly modified and reshaped.



Once you start looking, you will find that there are many 9mm magazines on the market; some are verticle, (like the Uzi magazine, left), others are angled, (like the Glock magazine, middle) and others have a curve to them, (like the H&K MP5 9mm magazine, right).

I have included modified templates in the pages that follow. Once you have created the design that Orion specified, you can use this one, and modify it as necessary for your magazine. I am hesitant to give you more direct advice regarding this because there are just so many 9mm magazines on the market; some are verticle, (like the Sten magazine), others are angled, (like the Glock magazine) and others have a curve to them, (like the H&K MP5 9mm magazine).

In the pages that follow I will discuss making your own magazine. If at all possible, I recommend purchasing a magazine - I purchased a Sten magazine to complete my Orion AK. However, I have included the following directions because a good magazine is critical to the functioning of good AK, but also because you may not be able to purchase a good magazine, but you CAN easily make one.

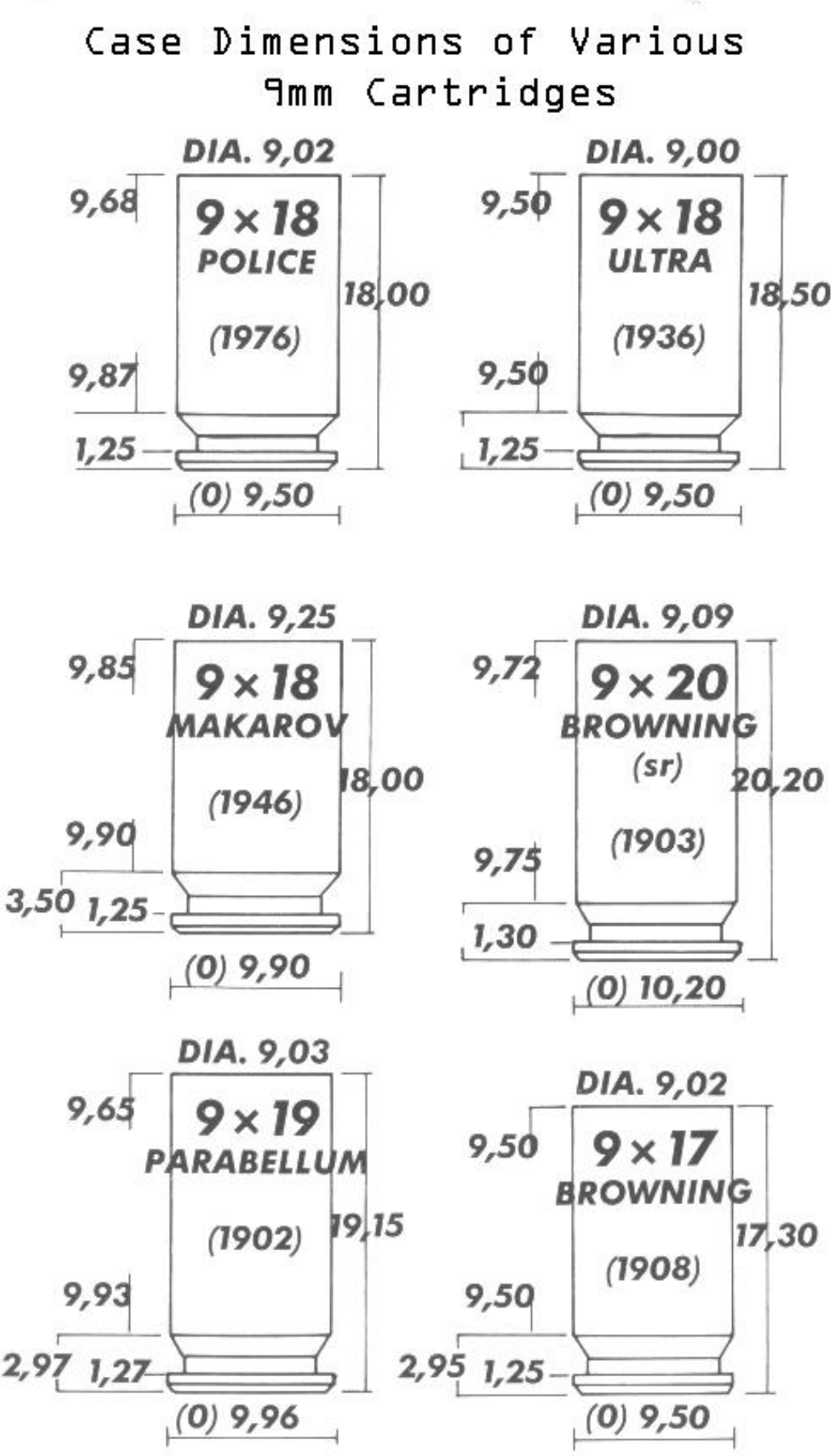
Again, the original AK-47 design, and the Orion pistol in particular, are very robust. You can leave everything else on the pistol as-is.

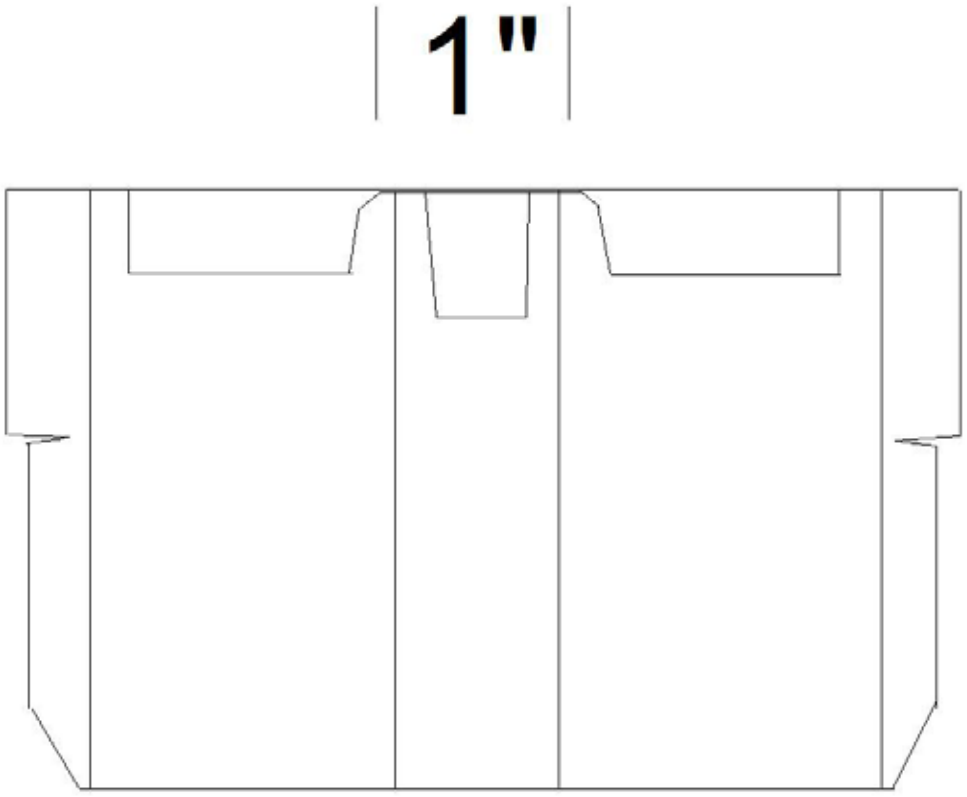
If you are confused about all the different 9mm cartridges available on the open market, you are not alone.

We have been discussing one cartridge in particular, the 9x19mm. This cartridge is most typically used in the United States, but several other variants exist - each of which is known by the generic name of 9mm.

The beauty of Orion's AK is that it is a robust, powerful design built on an AK-47 receiver.

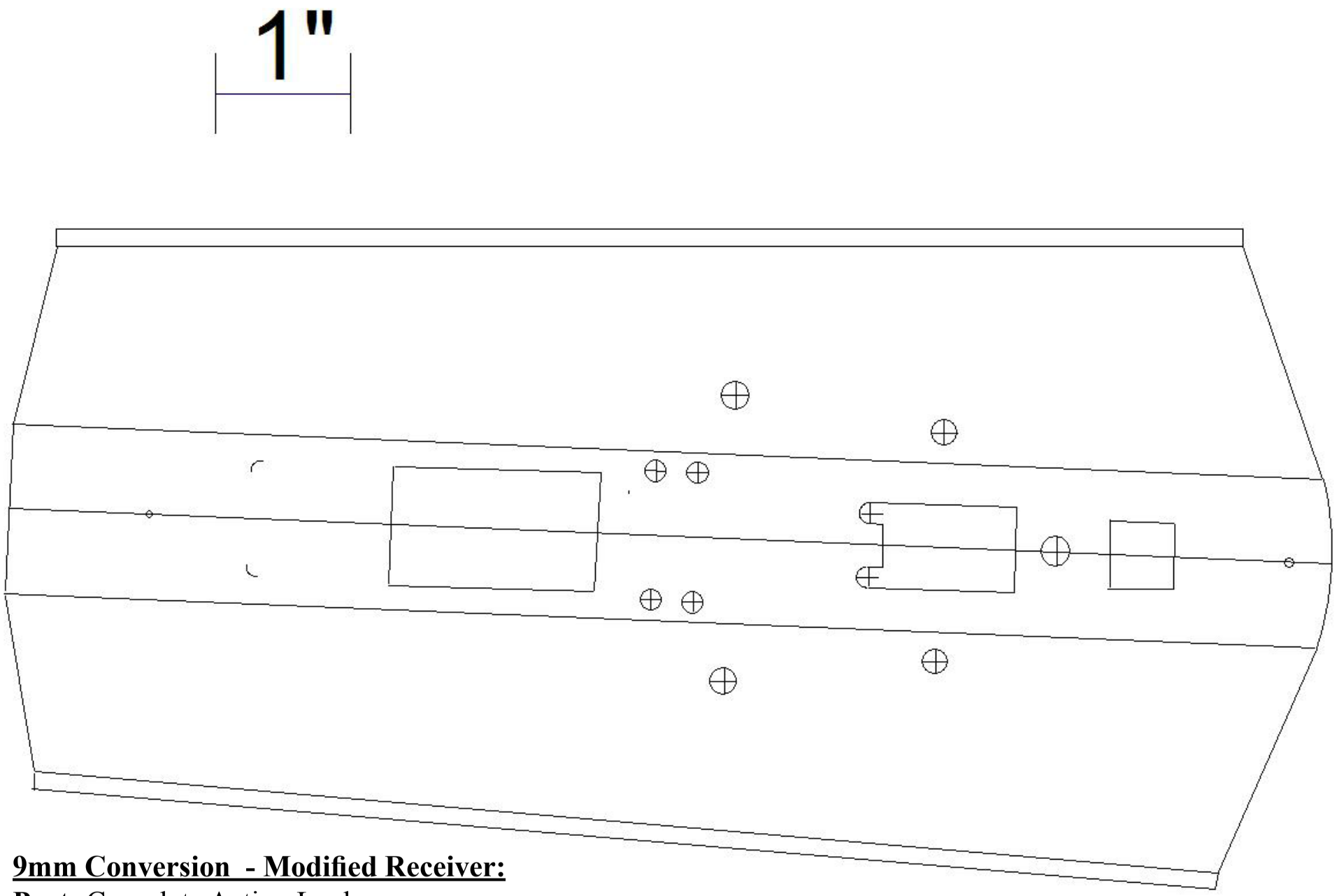
Provided you have an appropriately chambered barrel, and good magazines, you can build your AK for any of these 9mm rounds.





9mm Conversion Template:

Part: Magwell - Also Called Magazine Well
Made From: Sheet Steel 1mm or 0.040 inch or 20 gauge
Planset Color: Blue
Function: The magazine well holds the magazine in place, and properly aligns the magazine so that the bolt can strip bullets from the magazine and feed them, one by one, into the barrel. This magwell has been modifed from Orion's original and will hold a verticle magazine, like a 9mm Sten magazine. If you plan to use a curved magazine, you will want to use Orion's original magazine well.



9mm Conversion - Modified Receiver:

Part: Complete Action Lockup

Made From: Bolt Side View, Barrel and Front Trunnion, Side View Magazine

Planset Color: Grey, Black and Green

Function: Illustrates exactly how the magazine, magazine well, bolt and barrel all meet together within the pistol. Bullet is illustrated inside the barrel, to the front of the bolt.

9mm Conversion - The Magazine:

Very little has been written about creating robust, reliable magazines in the past. The two best sources I have found have been in separate volumes, which I am going to reprint here. The first magazine tutorial will be from **Bill Holmes**' famous work - Home Workshop Guns for Defense and Resistance Volume 5, the AR-15/M16 published by Paladin Press. The second book will be from **Patrick Luty**'s book, Expedient Homemade Firearms: The 9mm Submachine Gun also published by Paladin Press.

Holmes will discuss in depth the process for making a magazine from a piece of sheet metal. If you have read the previous chapters, this process will be familiar: You print a paper template, glue it to sheet metal and then form it in a vise. Luty's method is much easier - you begin with a piece of rectangular steel tubing, and then form the magazine lips and insert a spring. Both are useful, and should assist you in this process. Let's begin with the Bill Holmes method.

Bill Holmes Home Workshop Guns For Defense and Resistance Volume 5 The AR15-M16
ISBN:0-87364-948-6 Magazines: Page 73

For years many of us used Sten type magazines in our experimental assault-type firearms, mainly because they were plentiful and cheap. Appearantly they are still plentiful, although the price has gone up.

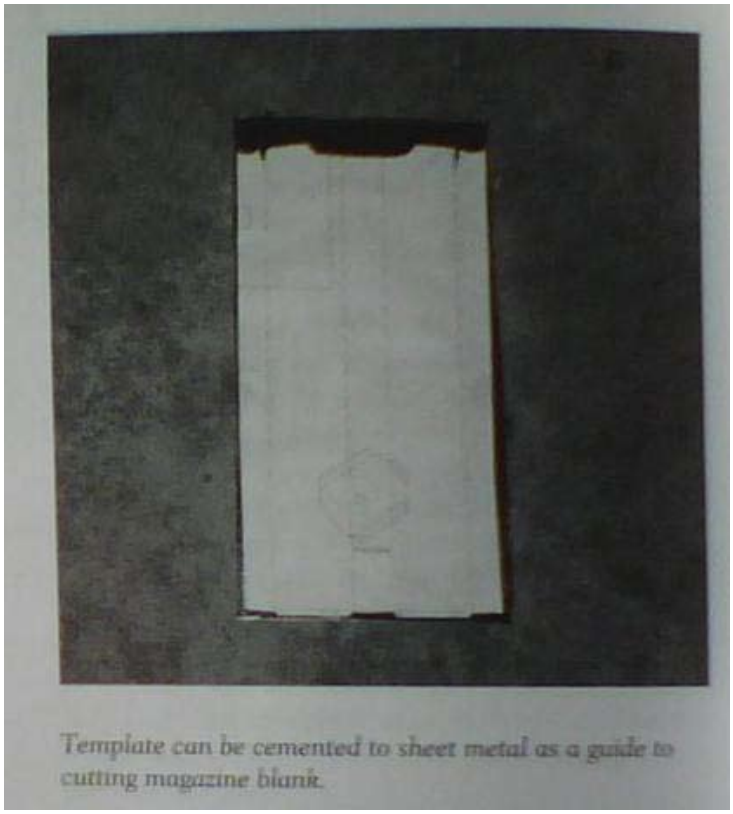
While the existing magazines should probably be used as long as they are available, mainly to save labor, an alternate source of supply should be kept in mind. This means making them yourself. Although I have detailed a method for making them in other books, a different method, which is somewhat easier but equally satisfactory when properly done, is described herein.

It should be pointed out that this unit was originally designed as a 9mm conversion only, to mate with existing AR15 or M16 lower receiver assemblies. The Sten magazine is the correct width to just fit inside an original magazine well, and, when used in combination with the magazine adapter described in the small parts chapter, allows a close, snug fit. If the unit is built in one of the 10mm calibers or

.45ACP, the same outside dimensions must be adhered to since wider magazines, like the Thompson, Grease Gun and the like will not fit in the magazine well hole.

The same Sten magazines as used in the 9mm can be used with the larger calibers if the inside is swaged slightly longer to permit feeding of the longer cartridges. The maximum overall length of the .45ACP cartridge is stated to be 1.275 inches, and that of the 10mm's is somewhat less, depending on which one is used. All that is required is to swadge the concave seam at the rear of the magazine body without

The objective for this chapter will be to build a Sten type magazine, shown above. To begin, you will need a piece of 20 gauge (.032 inch) sheet metal shown below left. Template can be cemented to sheet metal as a guide to cutting magazine blank, (lower right). This sheet metal will be formed around a solid steel form block.



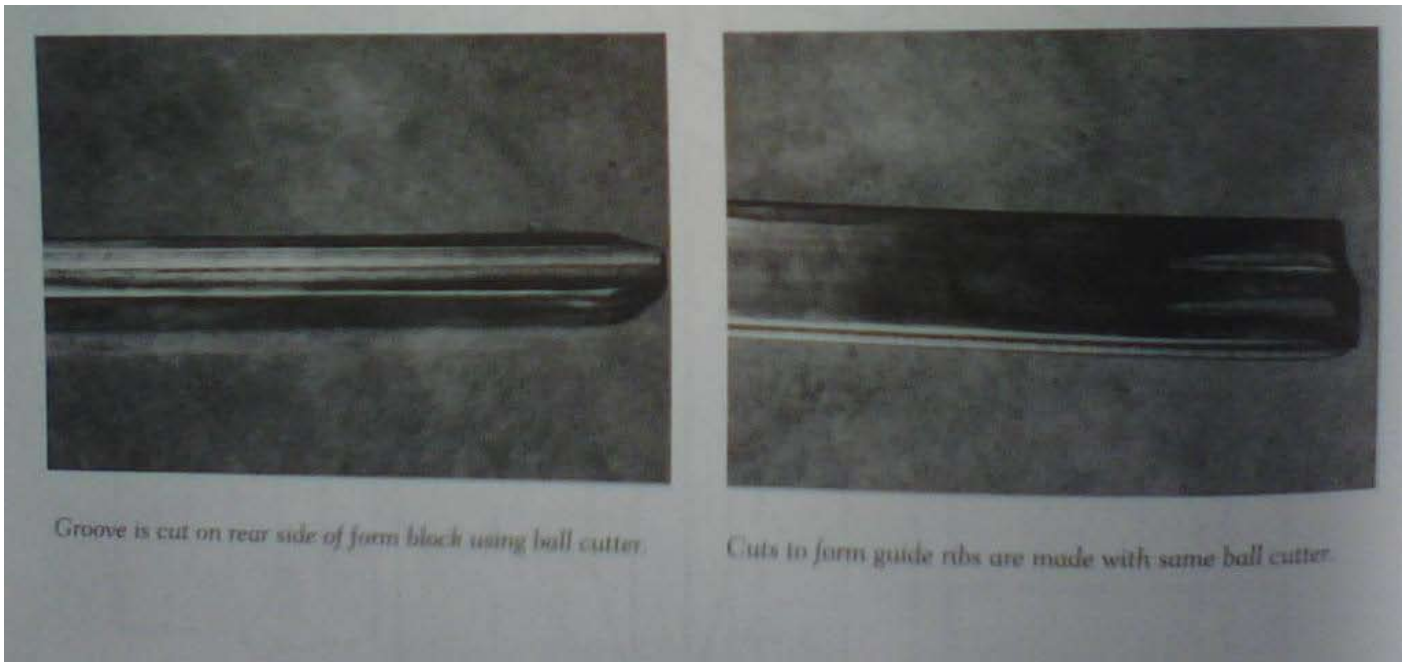
In these illustrations, you can see the exact dimensions for the Sten type magazines that Holmes is describing.

In the illustration above, you can see the dimensions of the top of the magazine, to the right we see dimensions from the rear of the magazine.

Note that these photos are not to scale - you cannot simply make cut-outs of these and glue them to a piece of sheet steel and use them as a template. Instead, I enlarged the photos so you can see the details of the magazine, and then reference the dimensions, which are in inches.

New magazines can be manufactured by making up a form block and bending the sheet metal body around it. The form block should be 1.400 inches deep, .730 inch wide and 10 inches long. The can be made from a solid bar or from thinner strips welded and riveted together. It's a fairly simple matter to reduce a bar of 1 1/2inches x 3/4 inches material to size, just as it is to fasten three 1/4inch x 1 1/2inch strips together and cut them down in a similar manner. The corners on the front side should be rounded to approximately a 1/8 inch radius. The rear corners should be fairly sharp, radiused only slightly. A convex slot is cut around the centerline on the back of the block. This slot should have a .125 inch radius and can be cut with a 1/4 inch ball cutting end mill to a depth of .100 inch if for a .45 magazine and .150 inch if intended for a 9mm. The end that will form the top, or lip end, should be cut at a 5-degree angle by 1/2inch long.

Two more concave grooves with a .125 inch radius must be cut on each side at the top as shown in Diagram #30. These form the guide ribs, which will assist in the reduction of the staggered, near double-row magazine to the single-row feeding, which, at least in my opinion, is far superior to a double-row feed. A 1/8 inch hole is drilled on center each end and on the front side of the block, and close fitting guide pins are installed.

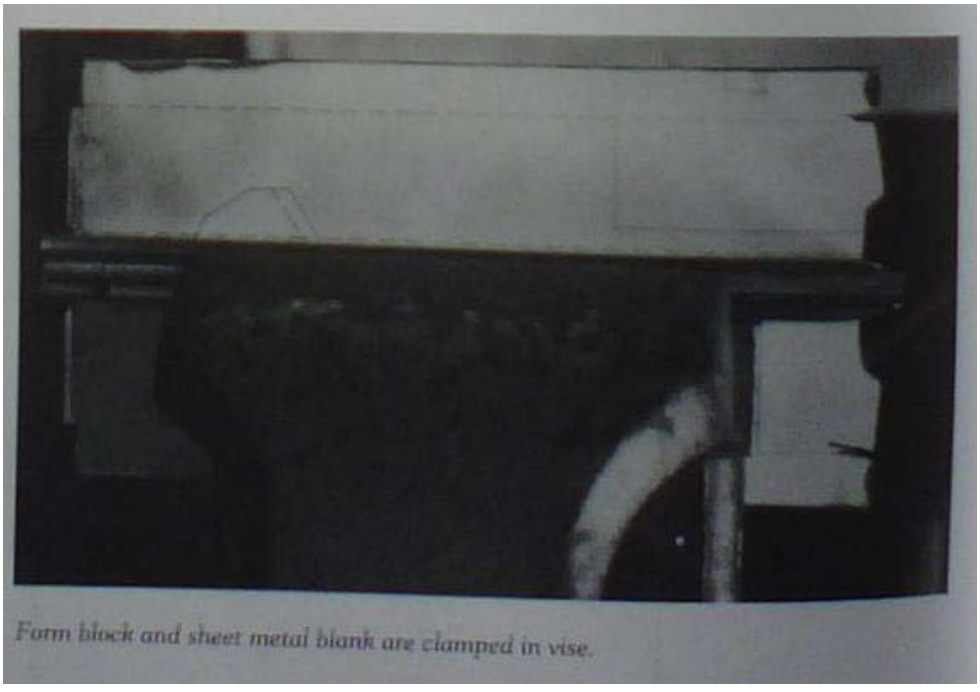


A solid steel form block will need to be created, and the groove along the back cut with a ball cutter. In the illustration on the left, groove to cut on rear side of form block using ball cutter. On the right, cuts to form guide ribs are made with same ball cutter.

It will be noted that the sides of the original factory-made magazines have a slight taper toward the front. This is omitted with the shop-made unit since the taper is difficult to form using the method described here.

The sheet metal magazine blank is cut from 20 gauge (.032 inch) sheet metal to the dimension shown with a centerline marked lengthwise. Corresponding holes fit over the guide pins in the form block are drilled on the centerline. The blank is now mated to the block and the assembley clamped in the vise with the front and back surfaces between the vise jaws and the upper side of the block even or slightly above the vise jaw. The underside should be blocked up using spacer blocks between the vise throat and bottom of the block. The protruding sheet metal is bent flat against the form block using a hammer and flat bar of metal. The assembley is then turned over and the other side bent flat in the same manner. An additional spacer must be added at the back for this last side to clear the previously bent side, which now extends past the surface of the block.

The assembley is next turned with the front side down and again clamped in the vise and one side bent flat. The edge of this side is swaged in to the half round slot using a hammer and the rounded edge of a 3/16 inch wide steel block. The edge of this side is swaged in to the half round slot using a hammer and the rounded edge of a 3/16 inch wide steel block. At this point the seam is welded or silver soldered. The magazine lips are bent flat against the form block and the guide ribs formed using the same 3/16 inch swage and hammer.



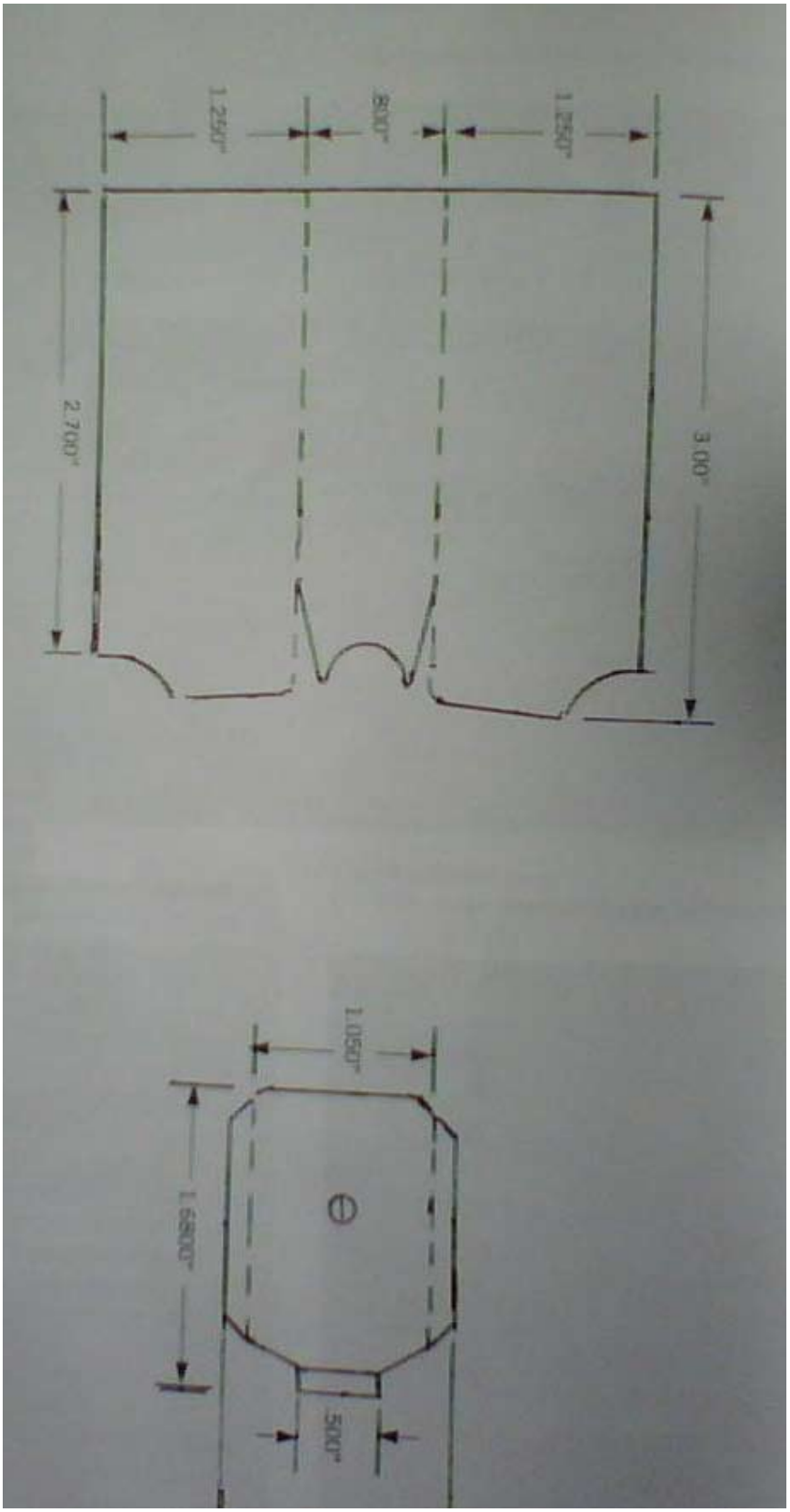
Form block and sheet metal blank are clamped in vise.

As illustrated on the left, the form block and sheet metal with bonded template are clamped in vise.

The upper "jacket" or collar is cut from the same 20 gauge sheet metal and mounted in place. If a number of small 3/16 inch holes are drilled through the sides of the jacket, the jacket can be welded to the body through these holes and the welds dressed flush. The seams at the upper corners where the magazine feed lips are formed are also welded and the welds dressed flush.

A flange is bent outward at a right angle to the body at the bottom edge of each side. These are to hold the floorplate, which is cut from the same 20 gauge sheet metal and the edges bent over the flanges. A hole to accept the pin that keeps the plate in place is drilled as shown in Diagram #30. The retaining strip, consisting of a 20 gauge sheet metal strip with both ends bent upward 90 degrees, is fabricated and a hole corresponding to the one in the floorplate is drilled and close fitting pin silver soldered in place. This serves to hold the floorplate in place except when the pin is pushed against pressure exerted by the magazine spring which will allow the floorplate to be moved forward off the magazine. This permits removal of the magazine spring and follower.

While it is possible to bend a magazine spring to shape using pliers, a much neater job will result when it is wound around a mandrel. This is accomplished by rounding the edges of a 3/8 x 1 inch steel bar, 14 inches long. A hole is drilled through the side at one end to accept .065 inch diameter spring wire. The resulting lathe is chucked in a lathe with the opposite end supported by the tail stock center. A V-shaped groove is cut across the faces of two small blocks that are clamped in the tool post. In practice, one end of a length of .065 inch diameter music wire is passed through the V-grooves of the tool post blocks and the extending end inserted in the hole in the mandrel. The tool post is tightened to exert tension against the wire as it is drawn through the notches. With the lathe running at the slowest speed and set for the coarsest thread available, the spring is wound. The factory spring for a Sten magazine is approximately 13 inches long and consists of 26 coils spaced 1/2 inch apart. This should be duplicated as closely as possible.



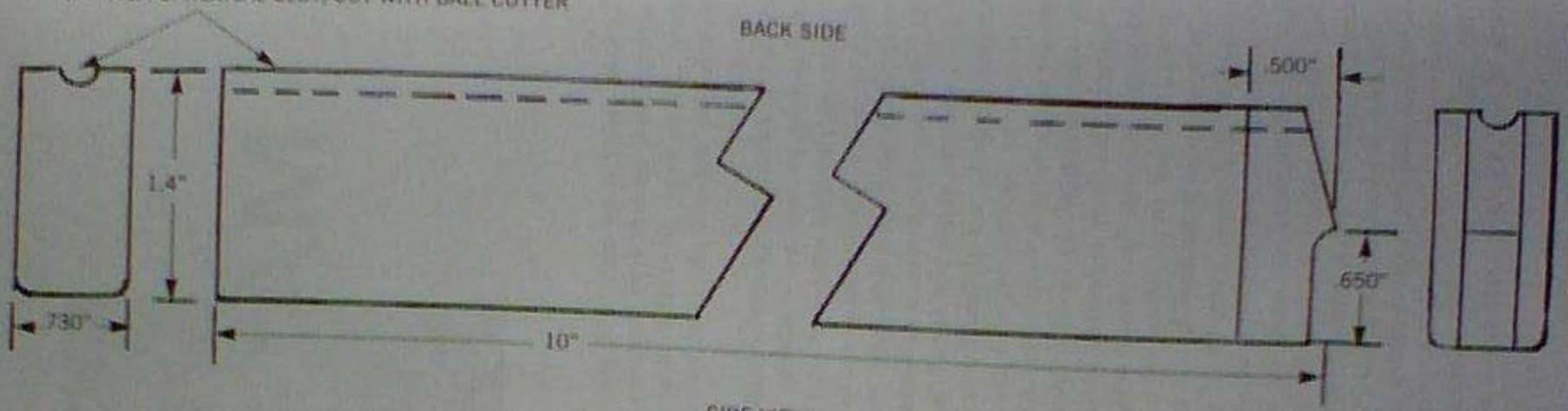
The follower is made with a top section shaped as shown in Diagram #31, with a leg welded to each end. The magazine is assembled by first inserting the follower into the bottom end. The spring is then put in place, followed by the retaining strip. This retaining strip is depressed against the spring, and the floorplate is slipped over the flanges and pushed to the rear until the retainer pin snaps in place.

It is hoped that commercial magazines remain available and plentiful. If not, however, this need not present a major problem since, as can be seen here, satisfactory magazines can be made in the home workshop as necessary.

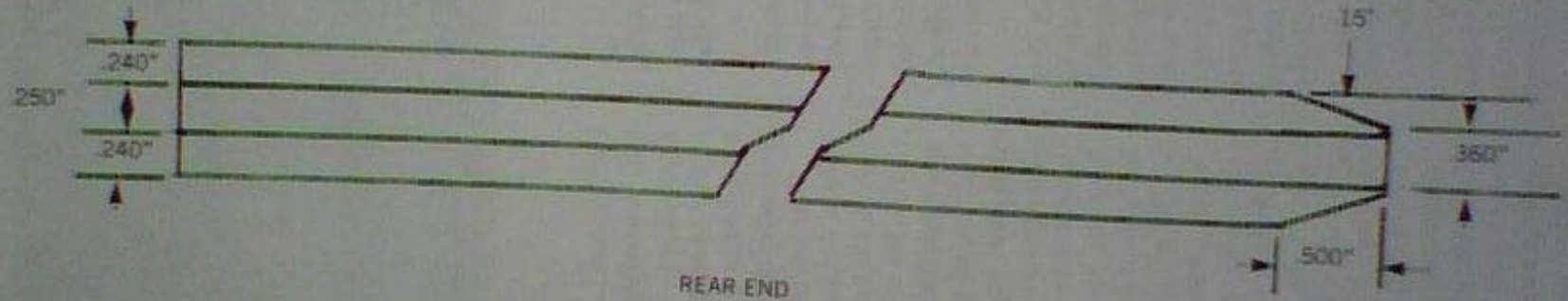
In the template on the left, you can see the magazine jacket (top) and the bottom plate of the sten magazine.

From top to bottom, the jacket is 3.00 inches tall, as indicated on the dimension on the far right.

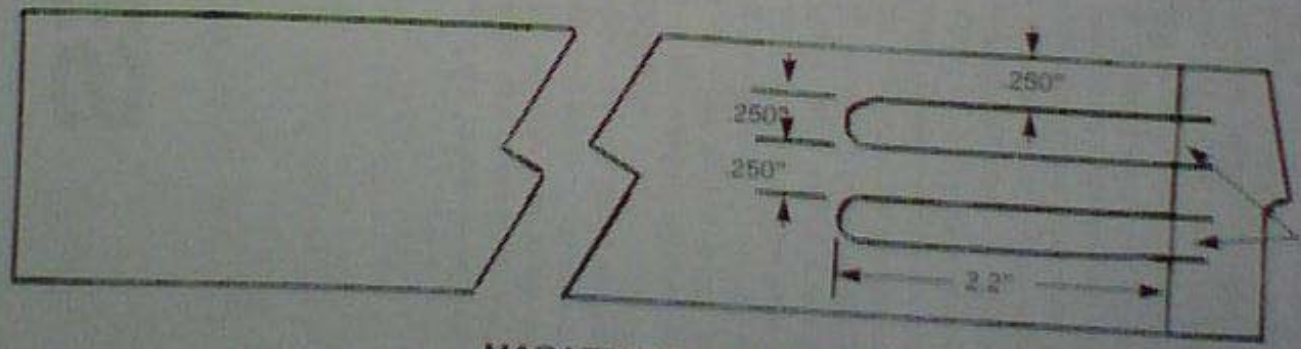
The base plate, (bottom) is 1.68 inches high, as indicated on the far left dimension.



SIDE VIEW



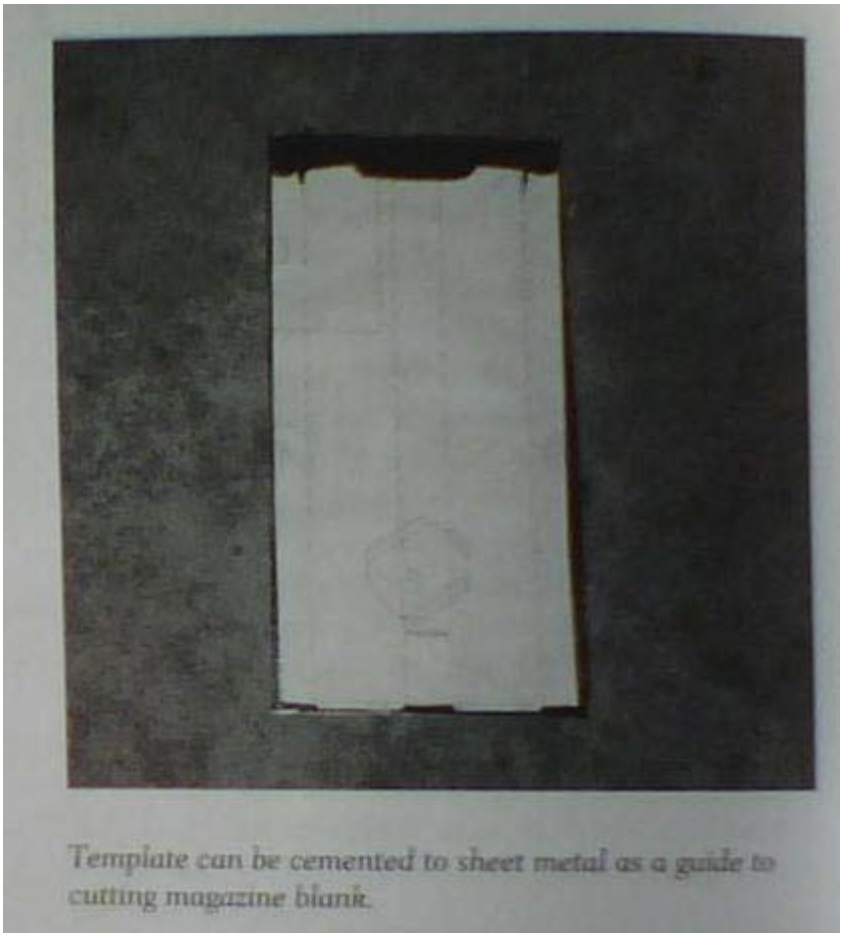
REAR END



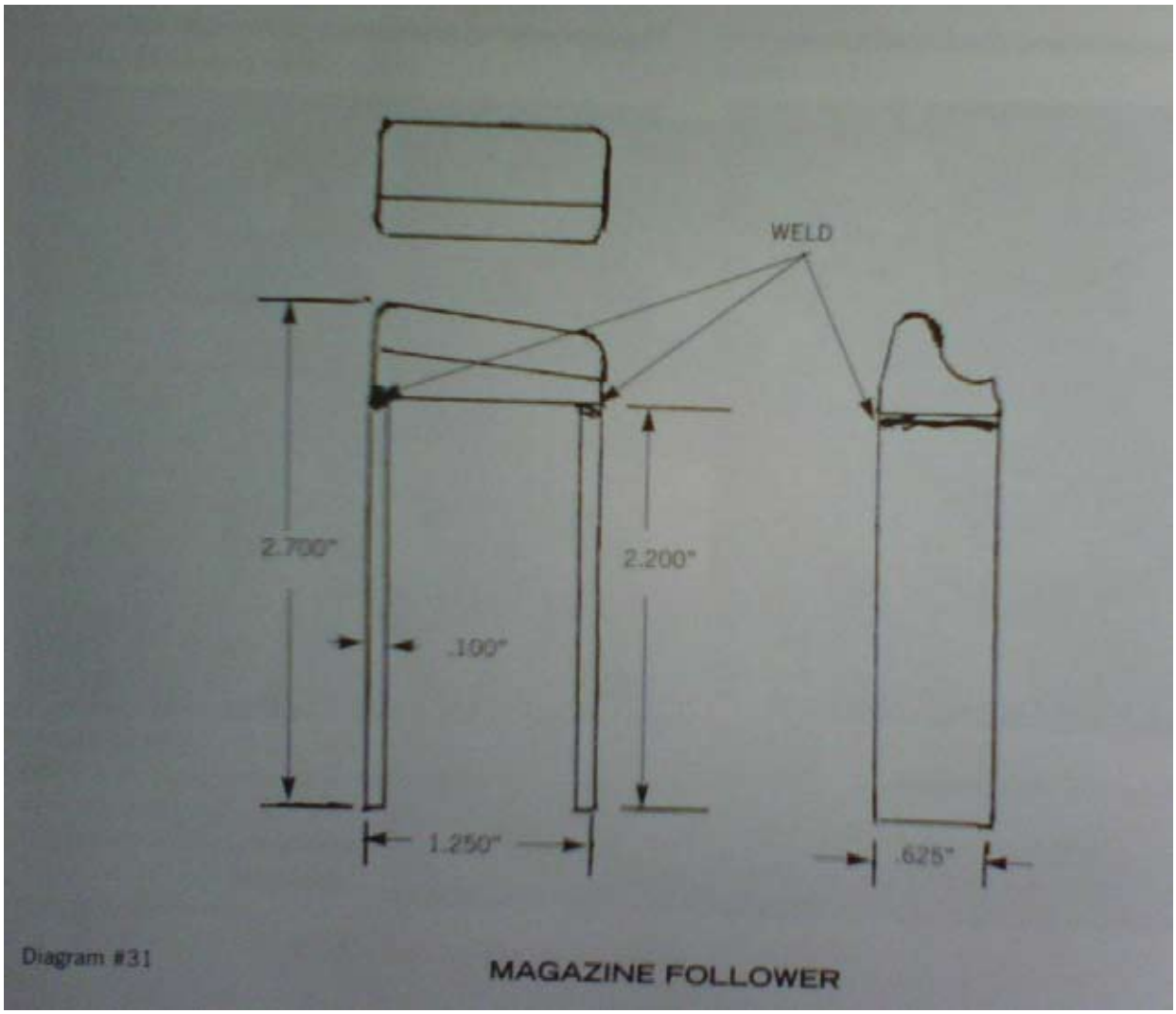
MAGAZINE FORM BLOCK

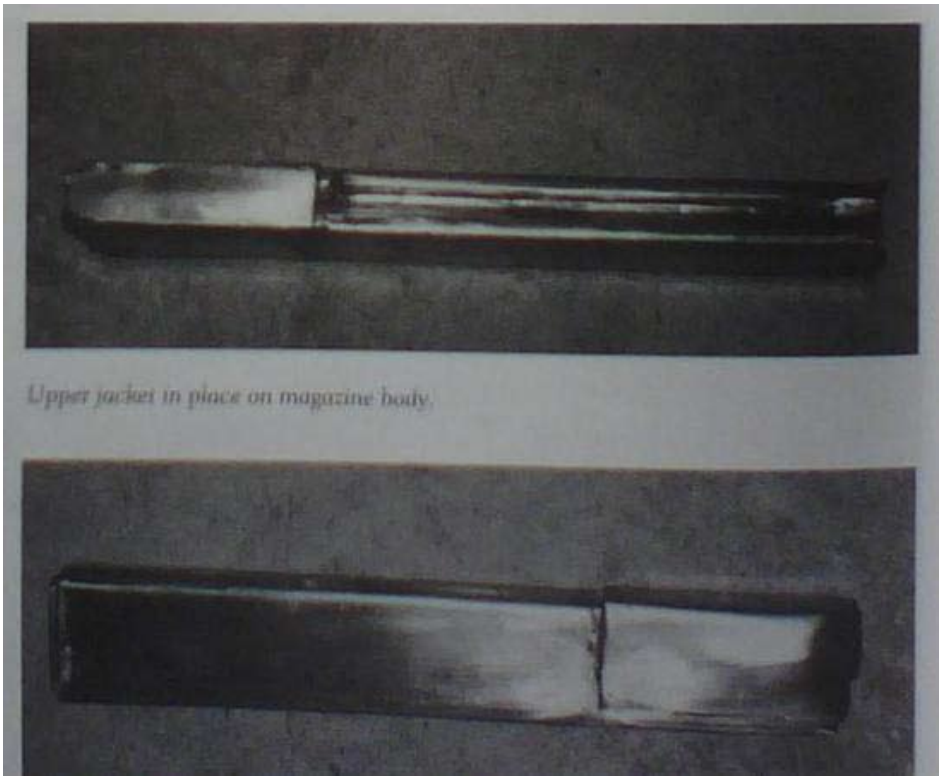
Diagram #28

74



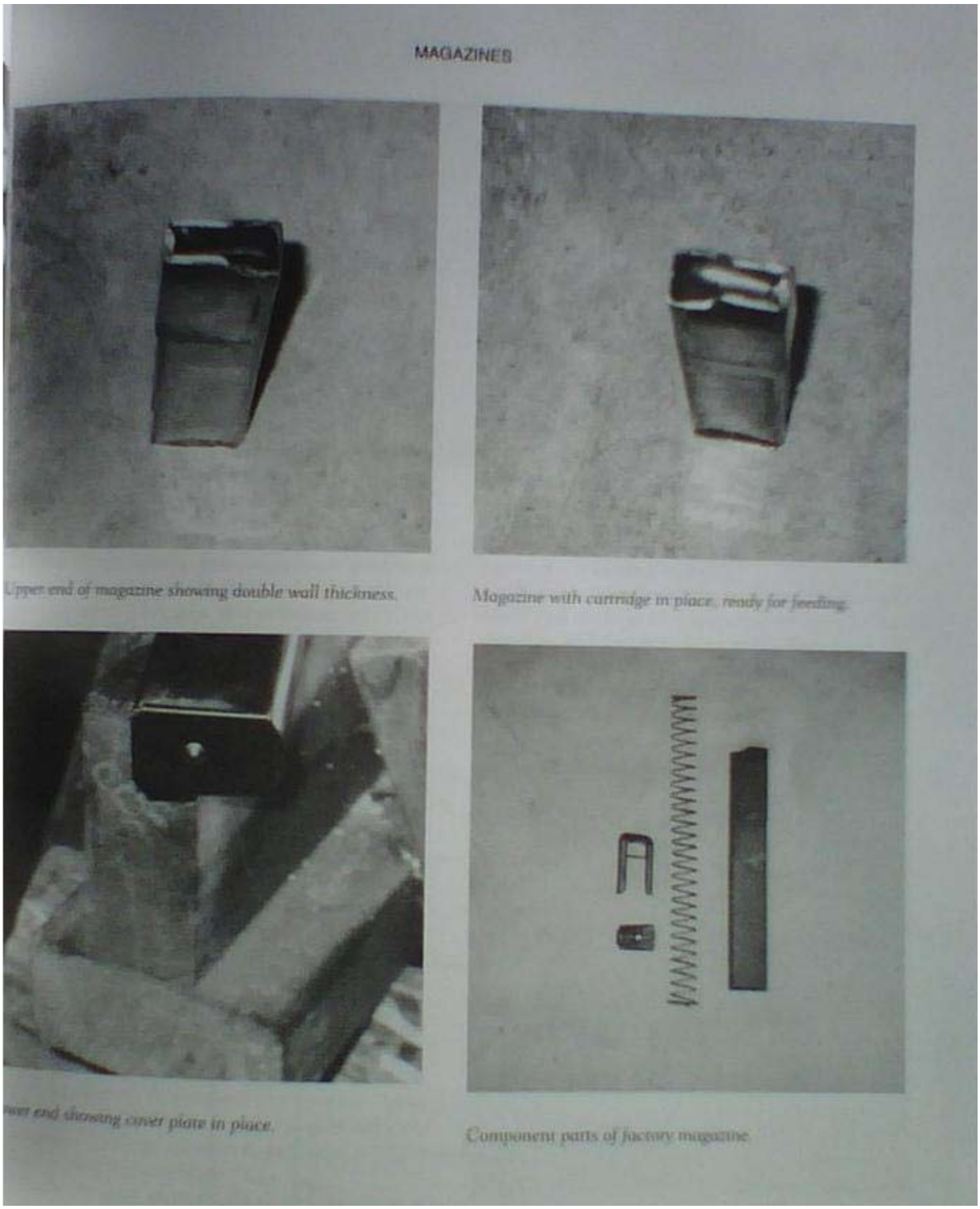
Pictured above, paper template can be cemented to sheet metal as a guide to cutting magazine blank.




Upper jacket in place on magazine body.

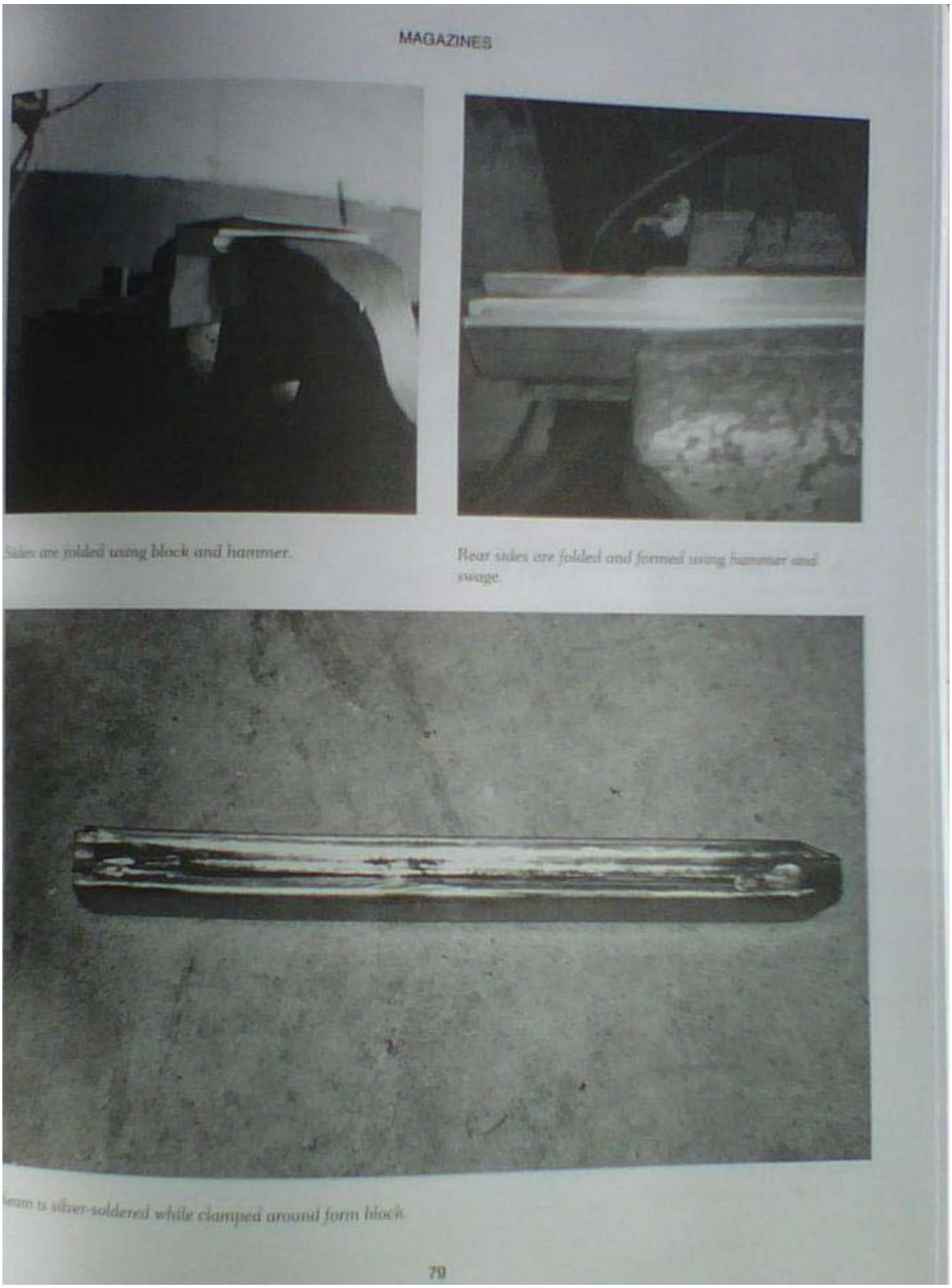
Pictured above is the Holms style magazine follower. This piece of the magazine pushes the cartridges up the magazine, and acts as a spacer between the cartridges and the spring.

To the left, Holmes illustrates the upper jacket in place on magazine body.



This series of photos shows the completed Sten-type magazine:

Upper Left Illustration - Upper end of magazine showing double wall thickness.
Upper Right Illustraion - Magazine with cartridge in place reading for feeding.
Lower Left Illustration - Lower end showing cover parts in place.
Lower Right Illustration - Compare parts of factory magazine.



A steel form block is central to the Bill Holmes design for a magazine. The solid steel form block must first be machined, and then the sheet metal is formed around it with a hammer.
Upper Left Illustration - Sides are formed using block and hammer.
Upper Right Illustraion - Rear sides are folded and formed using hammer and swage.
Bottom Illustration - Sides are silver soldered while clasped around form block.

Probably the best magazine in the world, from the World War II era, for the 9 mm caliber would be the Carl Gustav M45 36 shot magazine.

In 1945 a new 36 shot magazine was developed. It turned out to be one of the very best magazines in the world until now. It is wider behind and more narrow to the front. This construction allows the cartridges to move freely
up and down independent of dust, in below zero conditions. Magazines with parallel sides are very likely to jam under cold conditions. Thus, both Germans with MP40 magazines and British with Sten-Gun magazines found out the hard way. The M45 magazine has double rows of cartridges and it is very easy to load by hand.

Today, one of the best 9mm magazines on earth is the Glock magazine, pictured right.

Probably the most important part of any automatic firearm is the magazine. Without it, the machine gun or semi automatic can be no more than a single shot weapon. Making a magazine the usual way by bending a section of sheet metal around a forming block is a difficult and time-consuming process. We will not discuss this method of construction here, as it is not my idea of an easy-to-make improvised magazine. As with other component parts, a perfectly functional magazine can be made from a length of 34.93x15.88 mm ERW 16 gauge tubing, (i.e., 35x16 mm tube). The magazine is of a single-stack design, holding 18 rounds of 9mm ammunition. While this is a lower capacity than the 20 or 25 rounds of most factory-made twin-stack designs, the simplicity compensates for the reduced firepower. Let's face it - if 18 rounds of fully automatic fire cannot satisfy your requirements, you need a bazooka, not a machine gun!

The tube must be cut to a length of 9 inches, and then cleaned and dried. A copy of the magazine template (Figure AA) should be made and, after being cut out carefully, glued to the side of the tube. The only score line needed is the curved section at the top of the template. Now the point of punch is placed in the center of the 16 crossed holes and hit with a hammer. This will mark the positions of the cartridge counting holes for drilling. The positions of the two base plate holes at the bottom of the template are also marked by the same method. The template is removed and the marked out section at the top of the magazine tube can be removed with a saw and a round file or a half file.

Luty's magazine is very similar to an Uzi magazine in design.

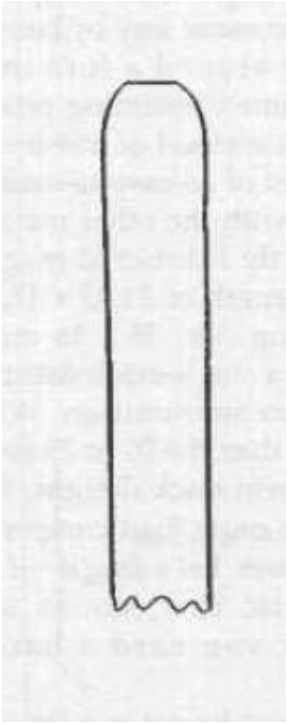
A slot is now cut into the rear of the tube, 7mm deep and as wide as the tube walls will allow. A 5mm-diameter drill is used to make 16 viewing holes in the postion marked earlier. The holes can be drilled through one side only or through both sides of the tube. Alternatively, the holes can be ignored completely, though they are very useful for quick observation as to whether the magazine is full, empty or anywhere in between. The two base holes are drilled through both sides of the tube with a 3mm bit. Drilling the viewing holes will create a series of burs inside the tube, and these must be removed. A flat file is inserted inside the tube and used to remove any burrs, so that the inside of the tube is perfectly smooth.

The magazine lips, which hold the cartridges inside the magazine, can now be formed to shape. Before this can be done, a simple forming block must be made, (photo 46), around which lips are bent. The forming block is made from a 10 inch length of 1 inch by 1/2 inch flat steel bar. One end of this bar must be filed to the contours shown in figure BB. The simplest way of doing this is to secure a large flat file to a workbench and scrape the block across the file. This allows far more freedom of movement to file the curvature of the block than having it clamped stationary in a vise.

Luty recommends starting with 34.93mm x 15.88mm ERW 16 gauge tubing - roughly 1.3 inches x .62 inches. Rectangular tubing forms the perfect frame for a 9mm magazine., (left).

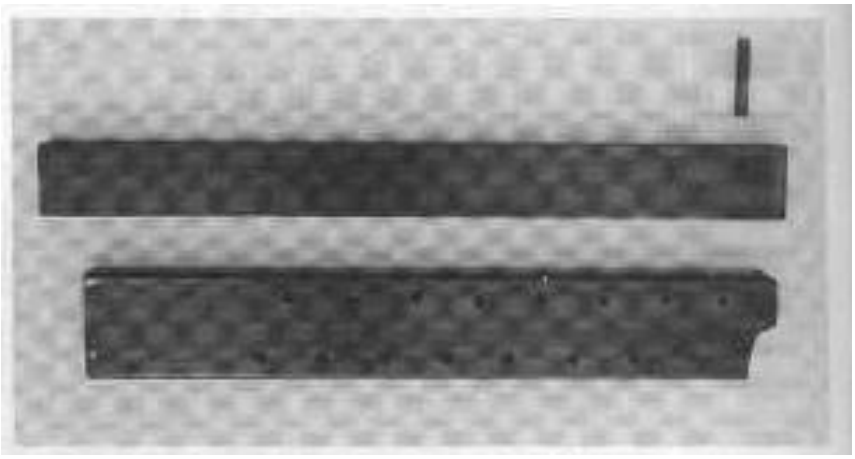
In America you will want to obtain rectangular tubing: 1-1/2inch x 3/4inch x 11 GA (.120 wall)

This tube size roughly matches the dimensions of a Sten magazine.

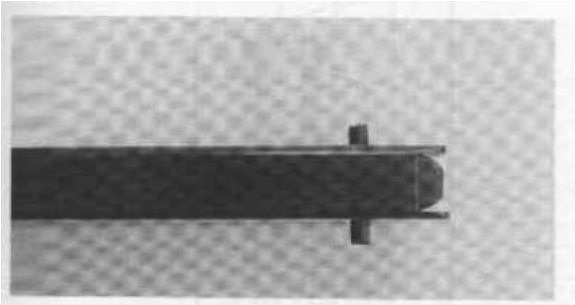


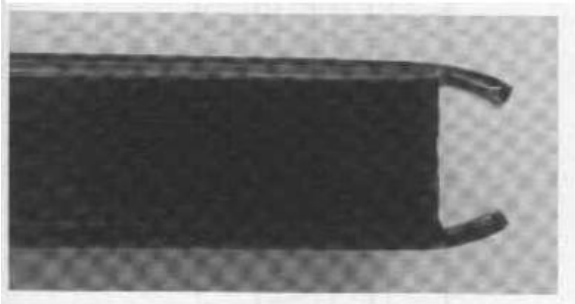
In the illustraton at left, a simple forming block can be made, around which lips are bent. The forming block is made from a 10 inch length of 1 inch by 1/2 inch flat steel bar. One end of this bar must be filed to the contours illustrated at left.

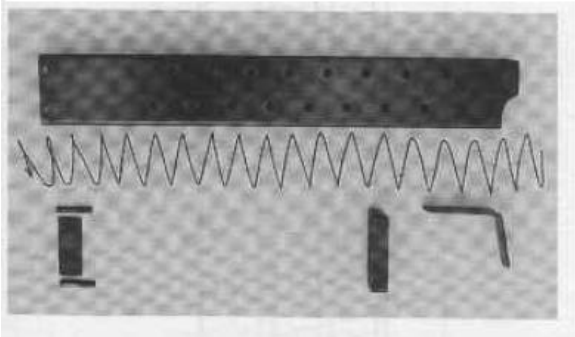
Once the block controur matches the drawing closely as possible, the block is inserted inside the tube. It is positioned against the back wall of the tube with the formed end about 1mm below the top of the lips. The block is secured in this position by inserting a length of 7mm-diameter bar into a gap between the block and inside the front of the tube. This should hold the block securely enough in position to allow a 5mm-diameter hole to be drilled through the first viewing hole and all the way through the block. Now a 5mm-diameter spring pin is tapped into the hole, and the round steel bar inserted earlier is removed. The spring pin is now holding the block securely inside the magazine tube (photo 47), and we can proceed to the forming of the lips.



Rectangular tubing, (below) and forming block with pin, (above) are shown in the above illustration.





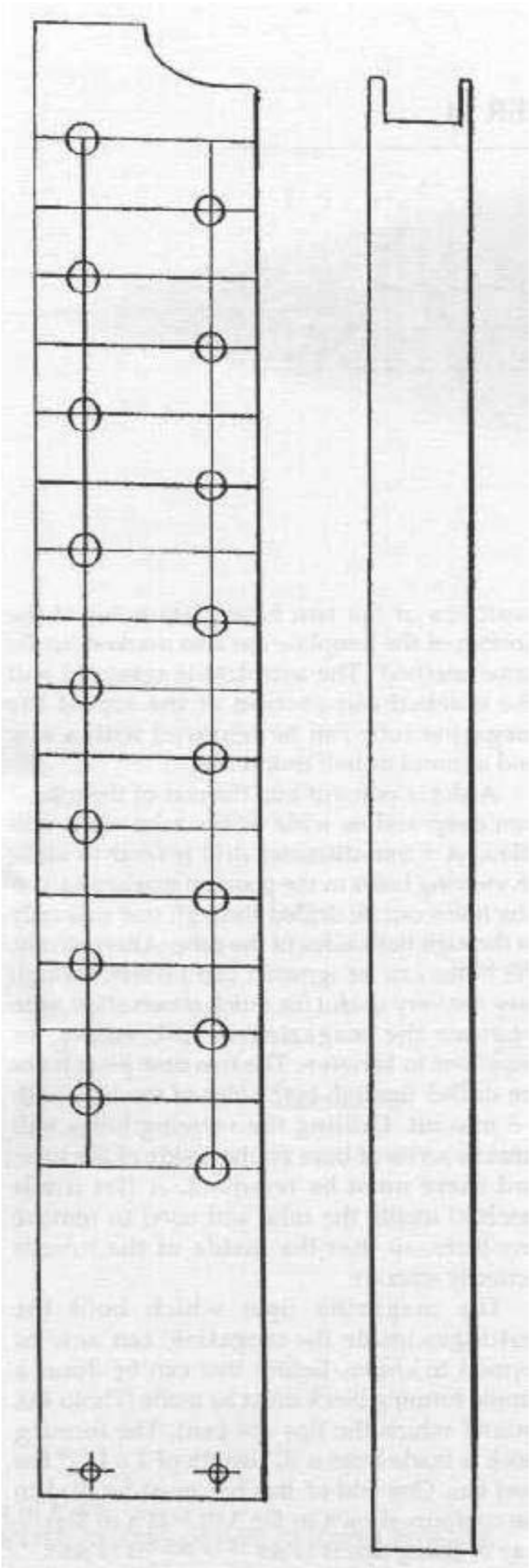


In the top illustration the forming block has been pinned to the inside of the rectangular tubing.

Middle illustration shows the lips of the magazine now pressed into shape. Again the space between them should be 9mm in distance.

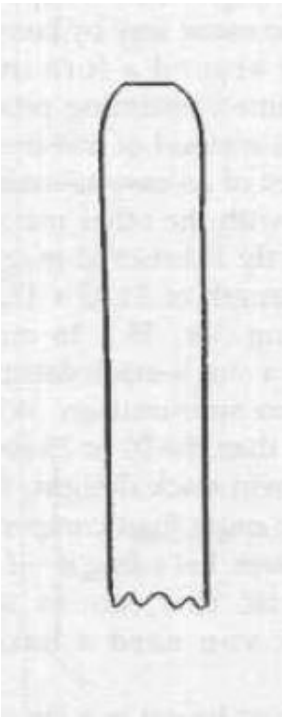
Photo below shows the small parts for the magazine that now need to be created. These include the spring, magazine follower and the base plate.

The assembley is clamped firmly in a vise so that only the top inch or so of the tube is visible above the vise jaws. A flat-ended punch, such as a short length of steel rod and a hammer, is required. The punch is placed against the lip along its top edge and tapped with the hammer while being moved back and forth along the length of the lip. After the lip is bent to the contour of the block, the same procedure can be carried out on the opposite lip. With the lips formed into shape, (photo 48), the spring pin and block are removed. If available, a micrometer is inserted into the top of the tube to measure the distance between the lips, which should be 9mm across. If the gap is less than this, the block must be inserted back into the tube and its bottom end tapped with a hammer. This will drive upward, and push the lips slowly apart, thus increasing the gap. The magazine tube is now finished, and the internal parts can be made and fitted.



In America you will want to obtain rectangular tubing: 1-1/2inch x 3/4inch x 11 GA (.120 wall) .

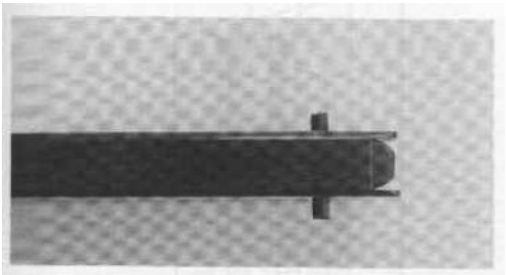
To form the magazine lips, simply cut the rectangular tubing as illustrated in the template at left.

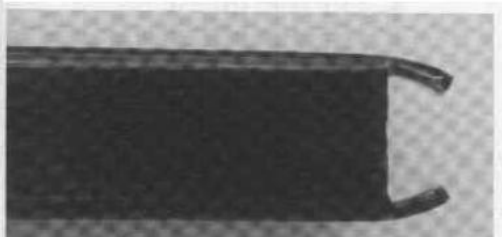


Again, in the illustraton above, a simple forming block can be made, around which magazine lips are bent.

The forming block is made from a 10 inch length of 1 inch by 1/2 inch flat steel bar. One end of this bar must be filed to the contours as illustrated.

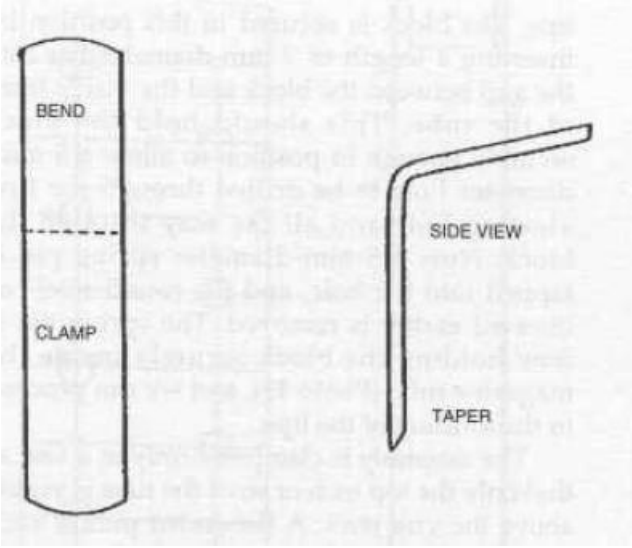
The finished product should look like the magazine illustrated below.





There are three parts to make, all of which are quick and simple: The magazine spring, the follower, and the base plate. They will be constructed in the order in which they are inserted into the magazine.

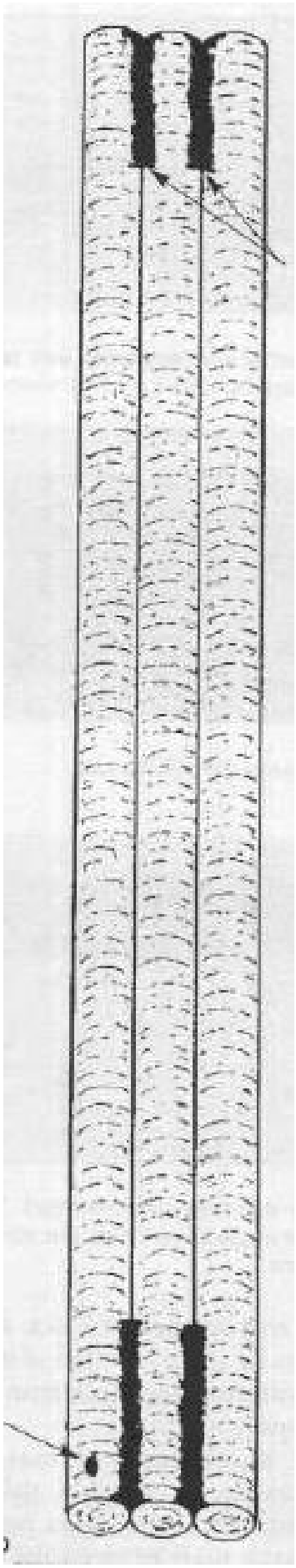
This first part is the follower, so called because it sits over the magazine spring and follows the stack of cartridges. This is made by simply bending a 2 1/2 inch length of 1/2 inch x 16 gauge steel strip to the shape shown in figure CC. A line is scored 1 1/2 inches from one end of the steel strip. The 1 1/2 inch marked out section is placed in a vise so the vise jaws touch the score line. The 1inch protruding section is tapped with a hammer until the follower matches the drawing. The sides of the follower may need to be filed slightly to allow it to slide freely into the magazine.



To make the follower, begin with a 2 1/2inch by 1/2inch strip of 16 gauge steel, and then bend as illustrated.

The sharp corners are rounded off at both ends of the follower, and then a slight taper is filed onto the end of the followers longer leg. The follower can now be inserted into the magazine; it can only fit one way - short leg first.

The magazine spring can be made next, but first a simple madrel must be assembled to wind the spring around, (figure DD). Three steel rods, 14 inches long and 8mm in diameter, are required. The rods must be cleaned and then stacked horizontally, one on top of the other, in a vise.



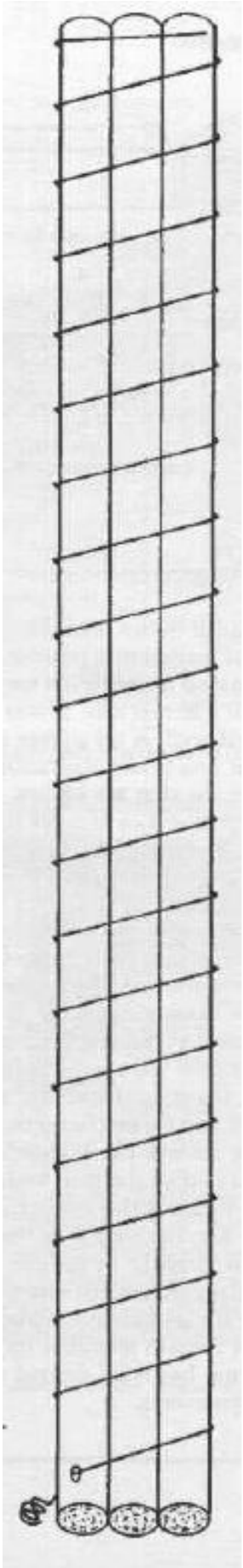
Magazine Spring:

Several inches of the rods should protrude from each side of the jaws, and the ends of the three rods must be level with each other. One end of the rod assembley is heated with a gas torch for a length of about 1inch . The rods should be glowing bright red, and then a self-fluxing brazing rod is applied to the areas to be joined. These areas should be brazed for a length of an inch or so to ensure a strong joint.

The opposite end of the rods can now be brazed together in exactly the same way. The mandrel is left in the vise until the rods have cooled completely. The brazed areas are cleaned up with a file if necessary to remove any rough spots. Silver solder could also be used to join the rods together perfectly well, but braze has better filling properties for the kind of wide joints created by the shape of the rods. Self-fluxing brazing rods eliminate the need to use any flux, since they are already coated with flux. This makes brazing a foolproof procedure.

Now a 1-5mm hole is drilled through one end of the mandrel to allow the insertion of the spring steel wire. The magazine spring can now be wound from 20-gauge piano wire. Nothing heavier than 20-gauge should be used, as it would make the magazine difficult to load. A 6 foot length of wire is enough for winding the spring. The end of the wire is inserted through the mandrel's hole and knotted to prevent the wire from pulling out.

A magazine spring can be made by first creating a mandrel, illustrated at left. The mandrel is made by brazing three rods together, and then drilling a 5mm hole in the far left rod, at the bottom.



To wind the spring, the end of the wire can be stood on and the mandrel pulled up until the wire is taut, or, alternatively, the end of the wire can be tied to a stationary object such as a vise, door handle or drain pipe and the mandrel can be held at an angle with both hands and turned (figure FF). A gap of no less than 15mm must exist between each coil of the spring. As with the coil mainspring, the gap can be adjusted by altering the angle of the wire while winding the spring.

When tension on the wire is released, the coils will partially unwind and the spring will not be triangular in shape. The knot of wire and any surplus unwound wire are snipped, and the spring is slid off the the mandrel. The spring must be bent back into its original rectangular shape, using the fingers to squeeze the sides of each coil back into shape.

Though difficult to explain in words, this is a straightforward procedure, and it will become self-explainatory when you see the spring. When a round spring such as the main spring is wound, it also unwinds, but still remains round, albeit a larger diameter. However, the rectangular spring does not remain rectangular when tension on the wire is released.

Although this is an unavoidable nuisance, it is quickly rectified. After the coils are bent back into shape, the spring is slid back over the mandrel and fully compressed several times. As with the coil main spring, the magazine spring will shrink in length from 14 inches to approximately 11inches, though this is only a rough guide. As long as the spring is 1 inch to 2 inches longer than the magazine tube, it is the correct length.

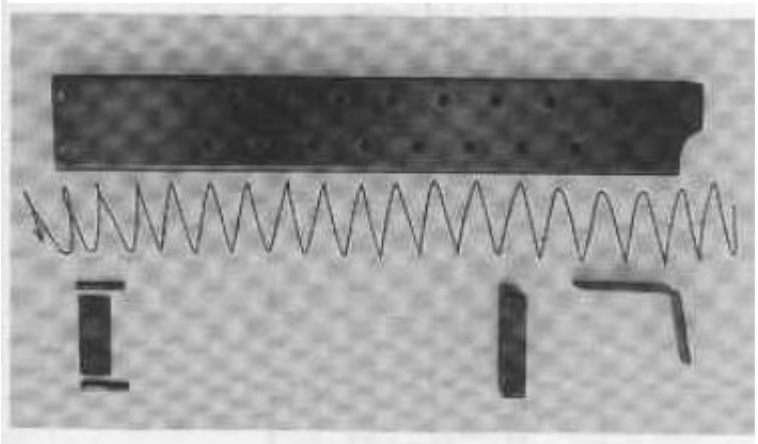
Now the spring is slid into the magazine behind the follower.

Base Plate:

Next, the base plate is made and held in position with two spring pin, 3mm in diameter.

The plate is a 30mm length of 1/2inch by 16 gauge steel strip - the same material used for the follower. The steel strip is cut to length and held in position in the bottom of the magazine. The two spring pins are now inserted to hold the base plate in position.

It is far easier to tap the pins just into one side of the magazine before inserting the base plate; this leaves both hands free - one to hold the plate in position and the other to hold the hammer.



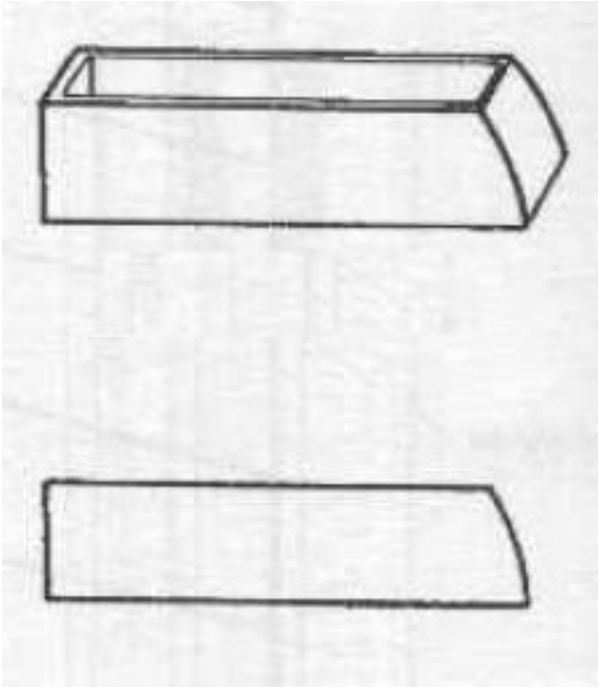
The base plate, illustrated in the lower left corner of this illustration, is a simple 1/2inch by 16gauge steel stip.

Magazine Stop:

The last part of the magazine to make is the stop. This has two purposes: it stops the magazine from being pushed too far into the gun, and it hooks onto the magazine catch to hole the magazine in position.

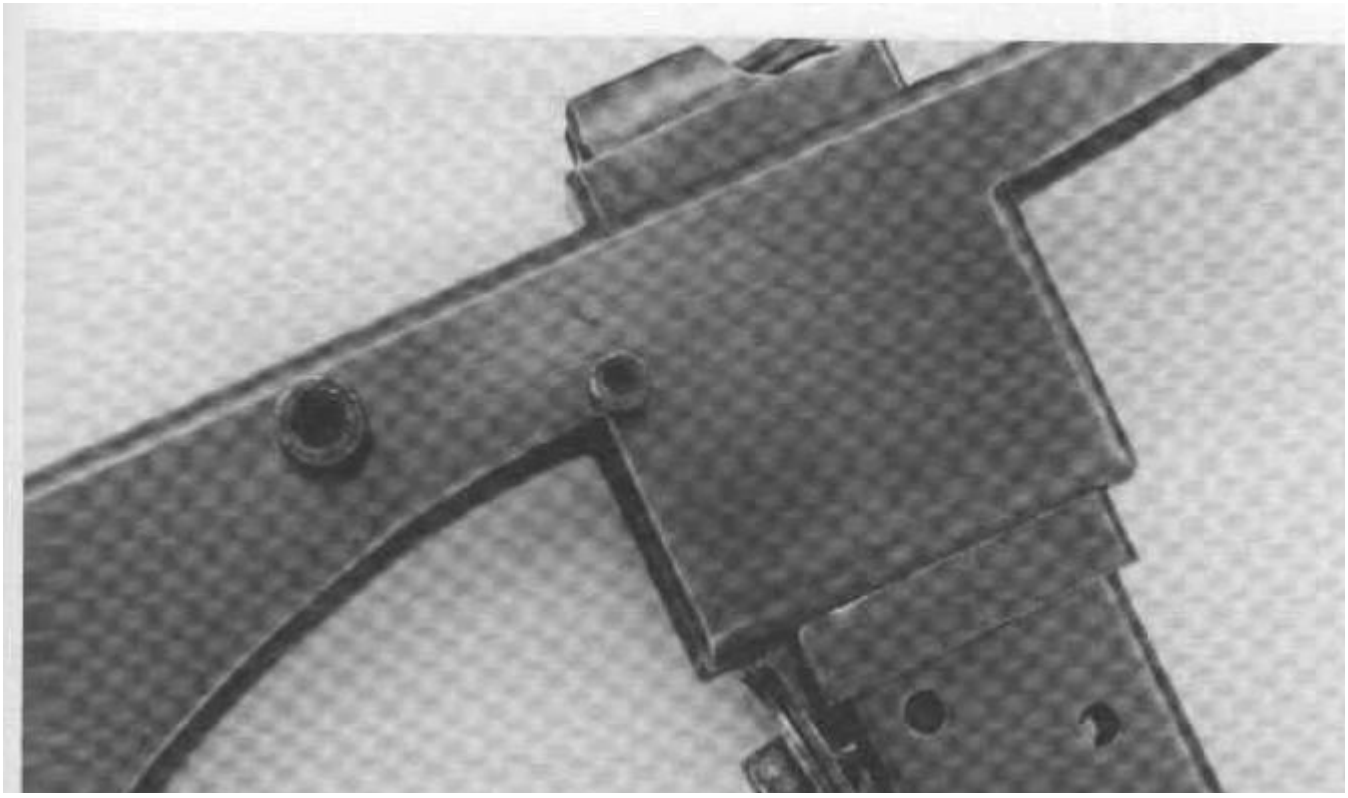
The stop is simply a 9mm thick slice of the same 40x20mm tube as was used to make the grip and well. A set square is used to mark a straight line across the tubing to ensure both sides of the stop are square. After it's cut out, the stop is slid over a file to make sure both ends are perfectly flat and smooth. A curved taper is now filed into one end of the stop to allow the catch to slide over it. The contour of the stop's taper is shown Figure FF. The stop should now be about 9mm thick with a taper filed into one end. The stop is slid over the top of the magazine with the tapered end positioned at the rear. The stop is positioned directly over the sixth viewing hole from the top of the magazine, and the magazine is inserted into the machine gun.

The release catch should slide over the tapered end of the stop and snap firmly into place, locking the magazine into position (Photo 52). The stop may need to be adjusted or filed slightly to reduce its thickness to allow the catch to fall into position. The stop will be silver soldered in place eventually, but it must remain movable for now until after test firing has been carried out, to allow for any adjustments.



The magazine stop, illustrated at left, will actually wrap around the outside of the magazine. It will stop the magazine from being pushed too far up into the magazine well.

In both of these pictures we can see the magazine Luty has created, as it looks when placed in his submachine gun design. In this case it has been mounted in the lower receiver, and is held in place by a small homemade magazine latch.



In a number of steps throughout his AK-47 build, Orion made reference to epoxy, and attaching various components together using epoxy. While he did not drop any names, I have used PC-7 on a number of occasions, and recommend it. Make sure you rough up the surfaces of the two parts with some emery cloth or sand paper, and that the surfaces are clean before applying the epoxy. Once it has dried, it can be machined and parts can also be bolted or riveted together.

Music Wire and Springs:

General-purpose, high-carbon steel, drawn music wire (such as ASTM A228) is manufactured in both inch and metric gauges in diameters as small as 0.006 inch up to 0.192 inch (0.15 to 4.8 mm).

A small number of companies produce the tough, high tensile strength polished wire intended for limited music instrument markets, which is manufactured from steel of a specific composition by cold drawing. Musical instrument strings, modern electric guitars in particular, are among the most demanding of all its applications. Placed under high tension, they are subject to repeated blows, repeated bending, are stretched and slackened during tuning and, in piano service, are still expected to last for decades .

Piano wire is used in the fabrication of springs, fishing lures, special effects in the movie industry and for cutting soap. It is also commonly used in hobby applications such as model railroading and both control line and radio-controlled aircraft.

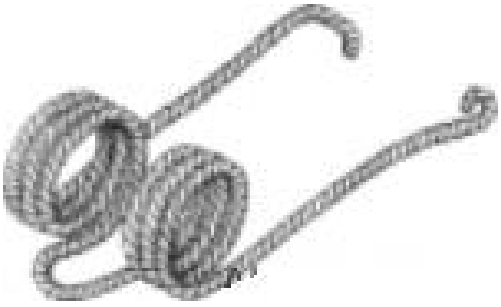
Music wire can be twisted into a number of different kinds of springs. Some examples include compression springs, (upper left), magazine springs, (upper right), double torsion springs, (lower left), and extension springs, (lower right).

The AK-47 Fire Control Group:

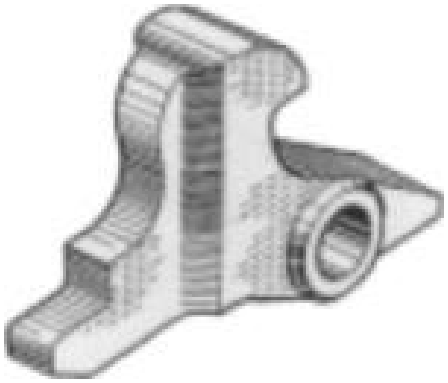
While it may initially seem mysterious, the AK-47 trigger/sear/hammer- collectively known as the Fire Control Group, or FCG, is not that difficult to understand.

Let's begin by clearly labeling each of the pieces and parts. Some will apply to the Orion design, and some will not.

Hammer:
Hammers are pretty much all the same, though some look a bit different. Pictured at left is a semi-automatic hammer.

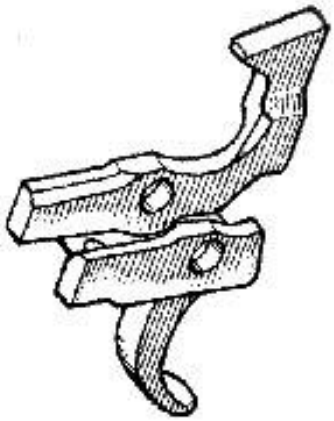


Hammer Spring:
This is a double coiled spring designed to work even if one coil snaps



Sear:
The part that holds the hammer back until you pull the trigger.

Double Hook AK47 Trigger:
Trigger with two arms that grab the hammer.



Single Hook AK47 Trigger:
Trigger with one arm that grabs the hammer.

Hammer/ Trigger Pin:
These holes are the same size so there are two identical pins for the hammer & trigger.

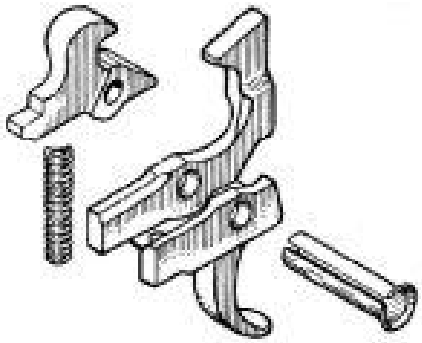
Hammer Pin Retaining Spring:
There are two pins that hold the trigger and hammer in place. This spring starts at the hammer and pushes into a groove in those pins to hold them in place. Once in place the safety is pushed through the loop in the retaining spring.

Safety Lever:

The safety lever (selector switch) is the safety and selector lever. On a traditional AK-47, when the lever is moved up, the weapon is safe.

When pushed down, (as illustrated left), the weapon is ready to fire.

The Orion weapon has no saftey, so your brain and index finger will need to suffice.

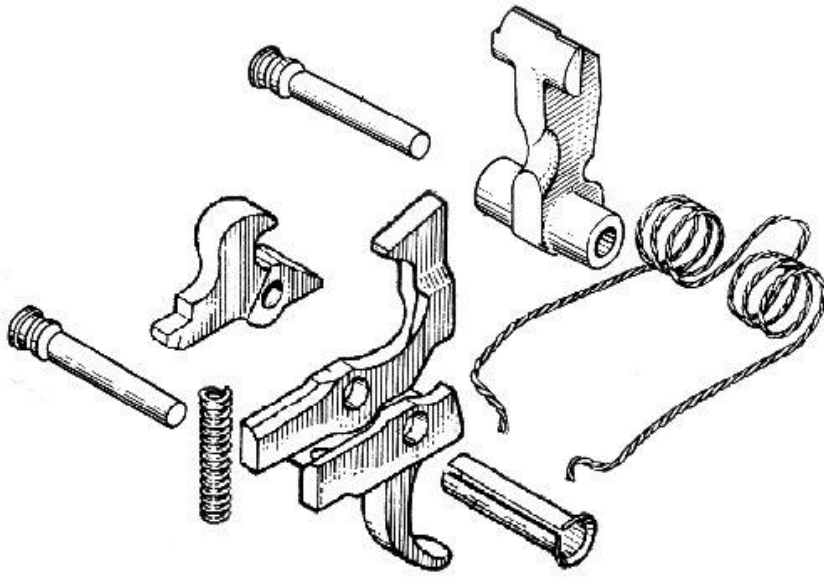


Trigger Assembley:

At left you can see how the trigger, sear and sear spring are assembled.

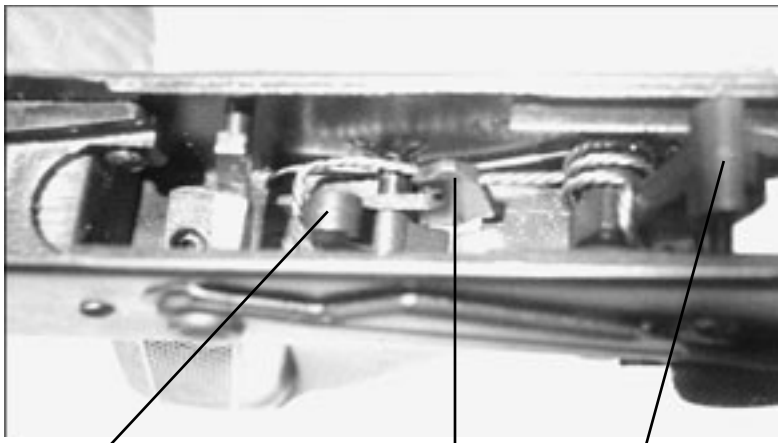
Trigger-Hammer Lockup:

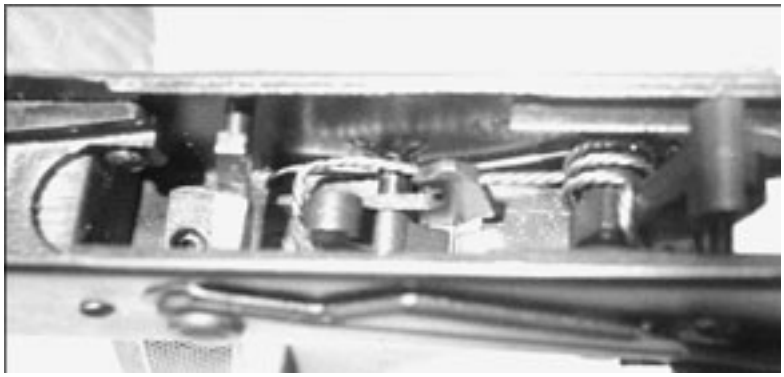
At left you can see how the assembled trigger and sear will engage, or hold back the hammer.



Fire Control Parts:

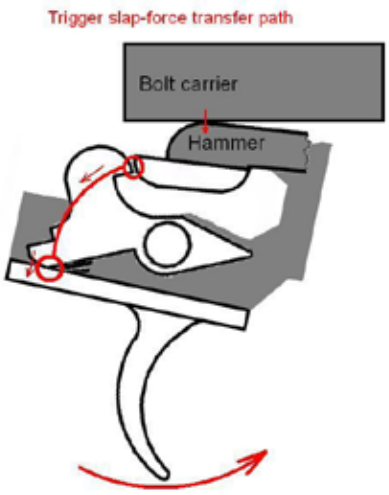
At left is a comlete semi auto trigger group. A typical semi auto trigger group will consist of the parts previously described, and assembled as illustrated.

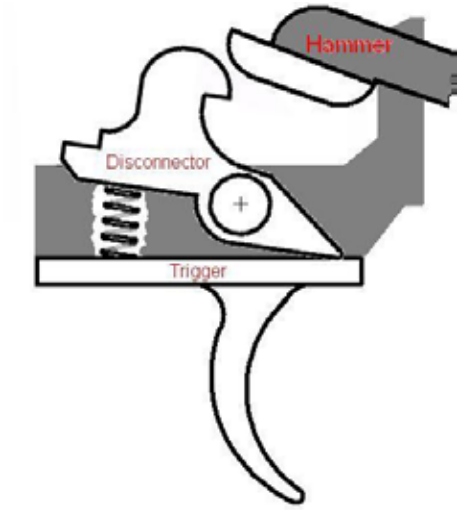


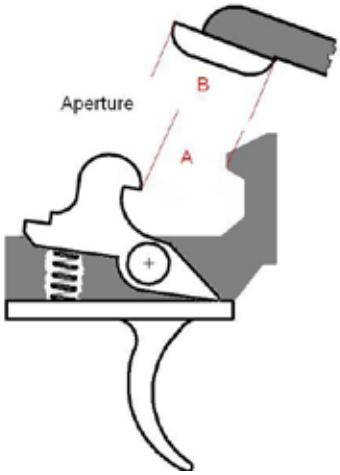


Fire Control Parts In the Receiver:

In the illustration at left and above you can see how each of the fire control parts are arranged in an AK-47 receiver.





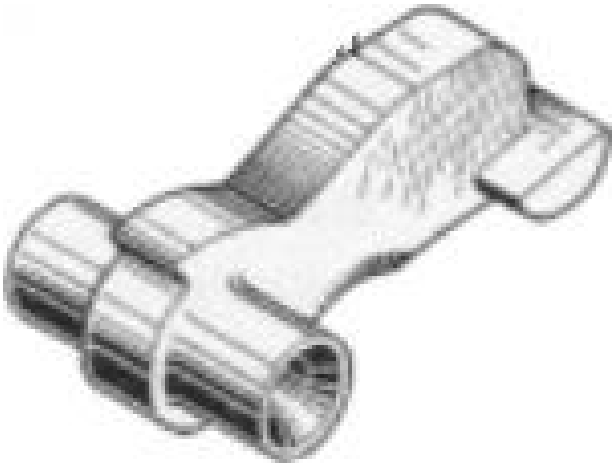


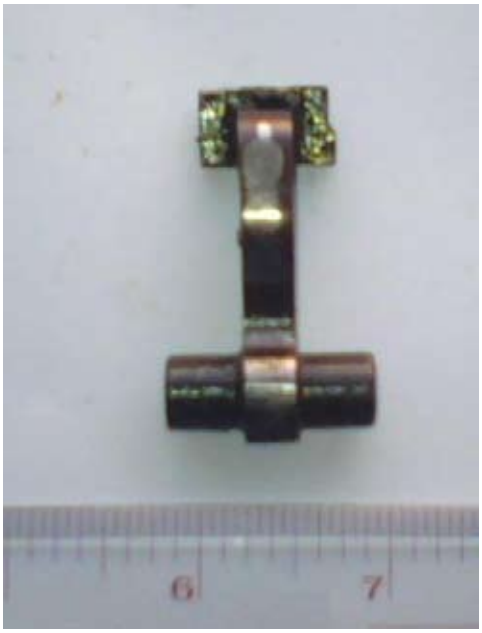
<u>Firing Sequence:</u>

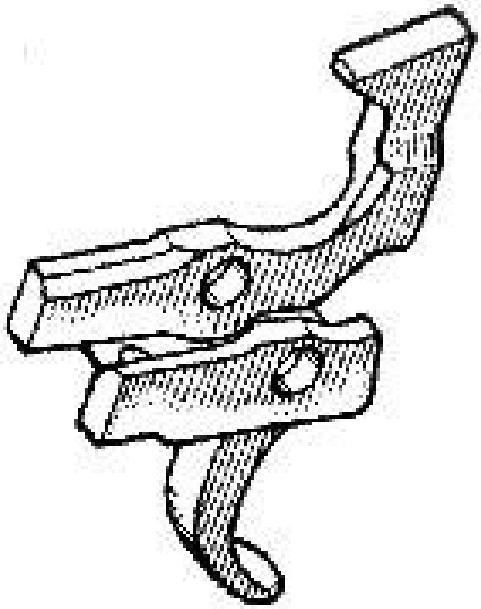
The firing sequence for an AK-47 is illustrated above. In the upper left corner, the trigger and sear are pictured. In the upper right corner, the bolt moves the hammer back and into position; it is held in place by the sear. In the lower left corner, the bolt is clear and hammer is held in place. Lower right illustration shows the hammer being released once the trigger is pulled, and the sequence begins once again.

If you are not in a position where you can purchase the parts and pieces for the AK-47 fire control group, you will probably need to make them from scratch. While I am not going to include instructions on how to accomplish this task, I will provide pictures of each part, at the correct scale. If you are going to fabricate these pieces from scratch, accurate pictures area great place to start.

Hammer:







Trigger and Sear:


0 inch
1
2
3
4
5


0 inch
1
2
3
4
5


O inch
1
2
3
4


0 inch
1
2
3
4

Full Auto Fire Control Group (FCG):

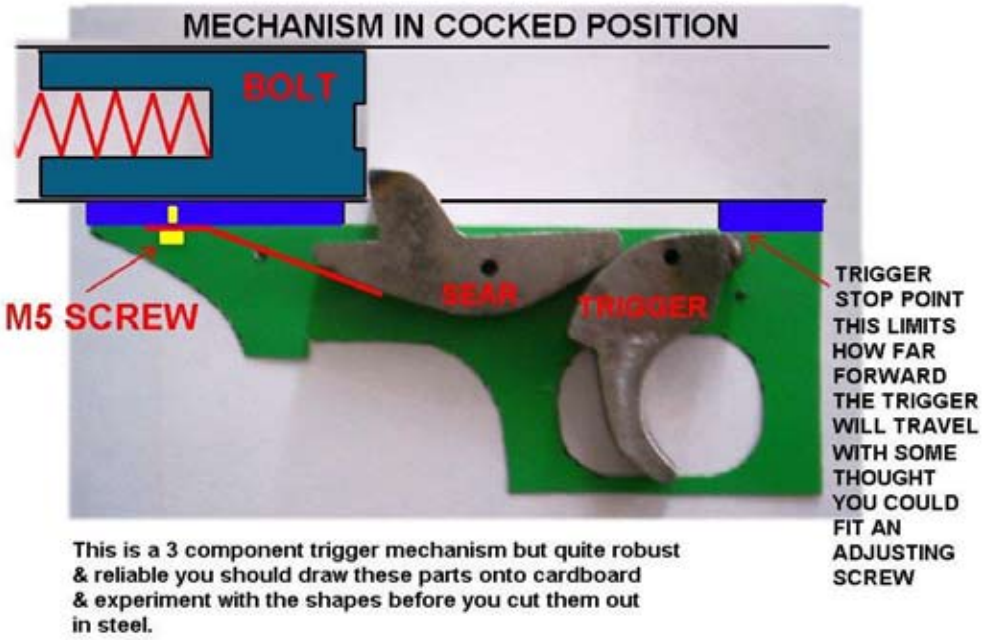
I include this next section with a bit of hesitation. For many of you, once you understand a semi-automatic fire control group, the next logical question is, "Can I make a fully automatic fire control group? That is, can I create a fire control group that will enable me to fire multiple bullets with a single pull of the trigger?"

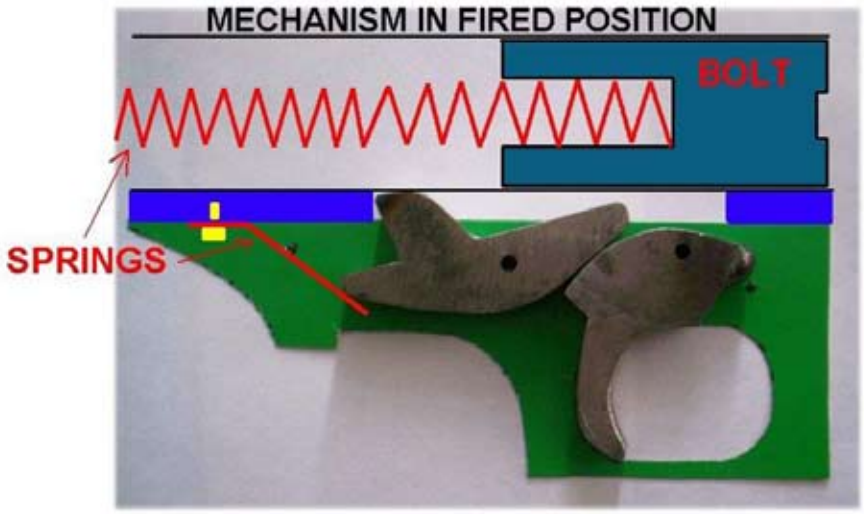
The answer is yes - but understand that while it is much easier to create a full auto fire control group, you will consume a great deal of ammunition, and you will, at least at the time of this writing, be in violation of the law. Specifically, the National Firearms Act of 1934, within the boundaries of the United States, makes it illegal for you to possess a fully automatic weapon unless you are also in possession of the correct tax stamps and transfer forms, (most often this is a Form #4 issued by the United States Federal Government).

Thus, for a number of reasons, the following pages are included for information purposes only, and I do not advise that you create a full auto fire control group unless you absolutely must. That is, if you simply cannot obtain a semi-auto FCG, then use this one, as it is MUCH easier and faster to create.

To make the full-auto fire control group work, you will need a bolt with a fixed firing pin, similar to the Sten bolt pictured at right.

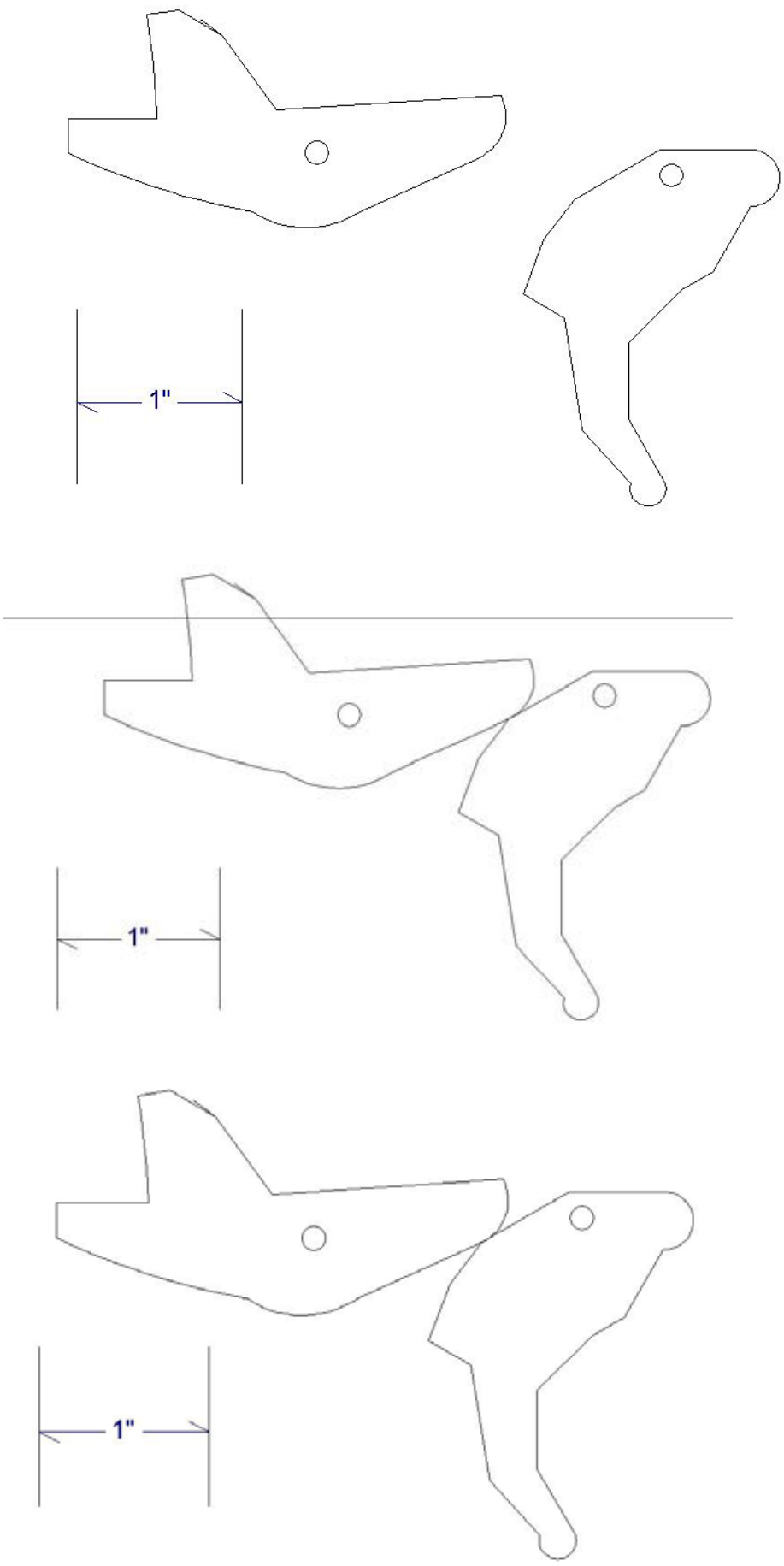
In the Orion AK47 design, a fixed firing pin can be accomplished by soldering or epoxying the existing firing pin into the AK-47 bolt, so that it cannot move. The pin should protrude beyond the face of the bolt 2-3mm, and as the bolt slams forward, and chambers a bullet, it will immediately discharge the weapon as the bolt and firing pin impact the primer of the bullet.





Above you will see a cross section of the full auto fire control group. It consists of two pieces, the trigger and sear. The sear holds the bolt in place, and the trigger acts against the sear to release the bolt, once the trigger is pushed to the rear.

If you don't understand what is happening here, you will need to do a bit of research. Start with Open Bolt Firearms, Fixed Firing Pin in Bolt or research weapons that fire from an open bolt like the Sten, Sterling or the Carl Gustav M45 from Sweden.



Pictured at left are the templates for the open-bolt fire control group.

You know the process: Print this page, cut out the pieces in the top illustration and bond them to a 10mm or 1/2inch thick piece of steel, and start drilling and then cutting.

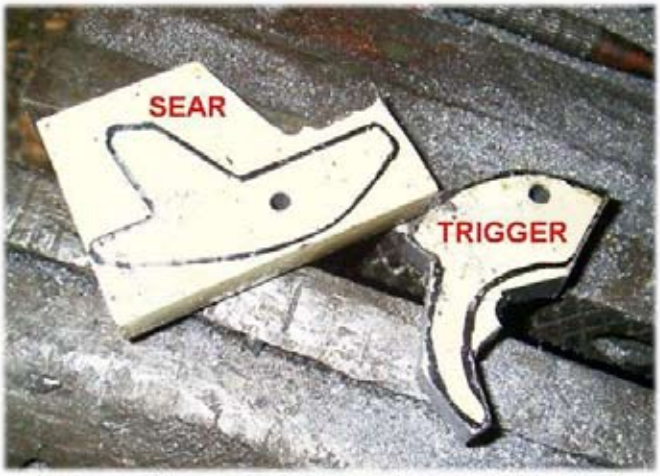
Lastly, you will need to drill holes in the AK receiver for this specific fire control group. You can use the middle and bottom illustrations for this task.

In the Orion design, the full auto fire control group and drilled receiver are very different from the semi-automatic version. No parts are shared or common between the two, and the receiver holes are completely different.

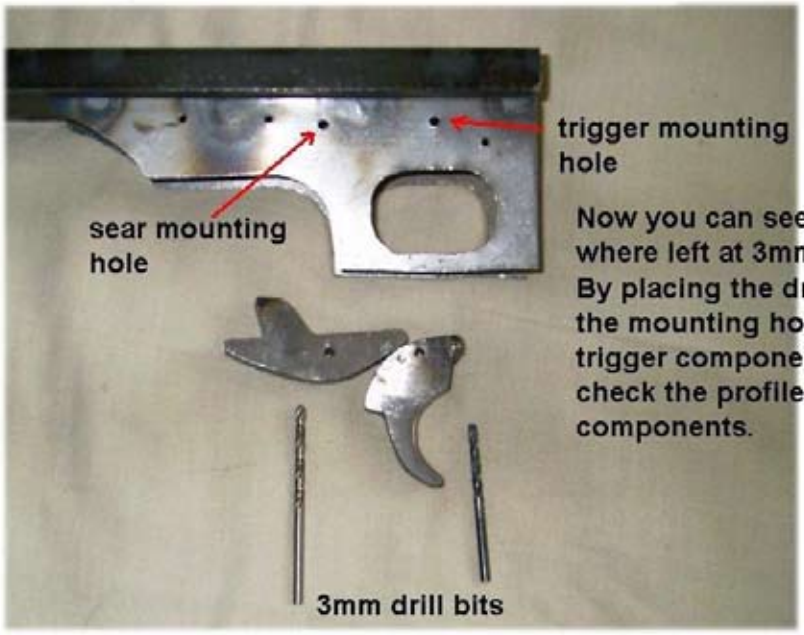
There will be no excuse if you are caught with the full-auto parts or a drilled reciever. The semi-auto parts won't work with the full auto model and visa versa.

If you have created a machinegun it will be obvious to everyone.

MAKING THE TRIGGER MECHANISM

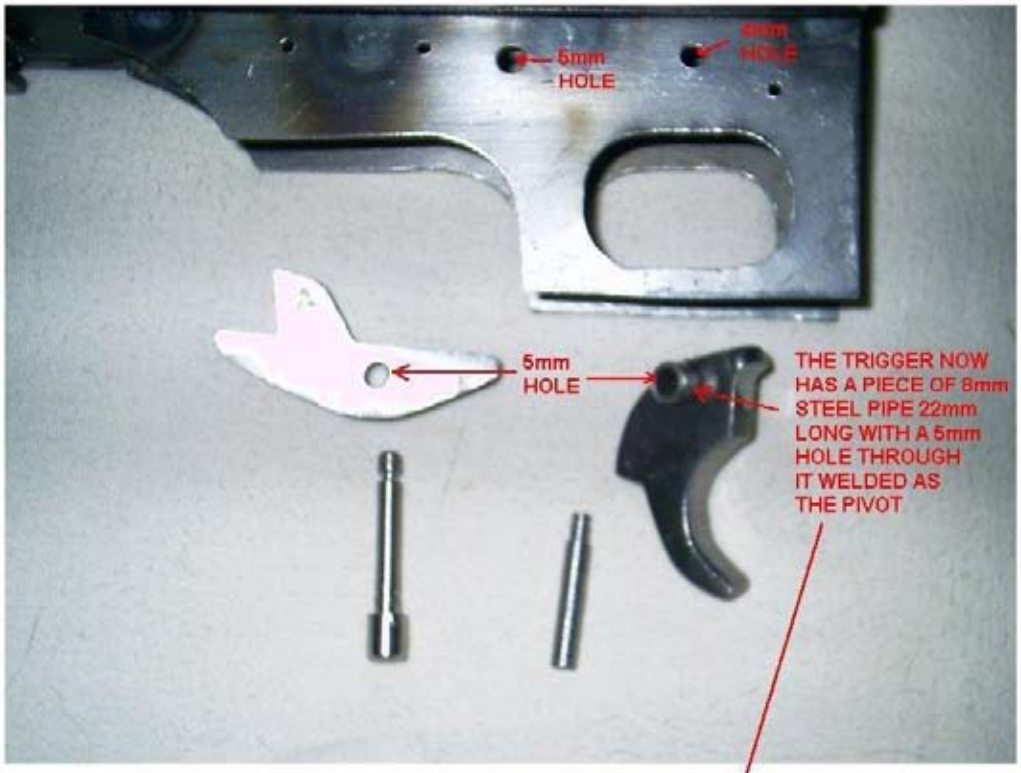


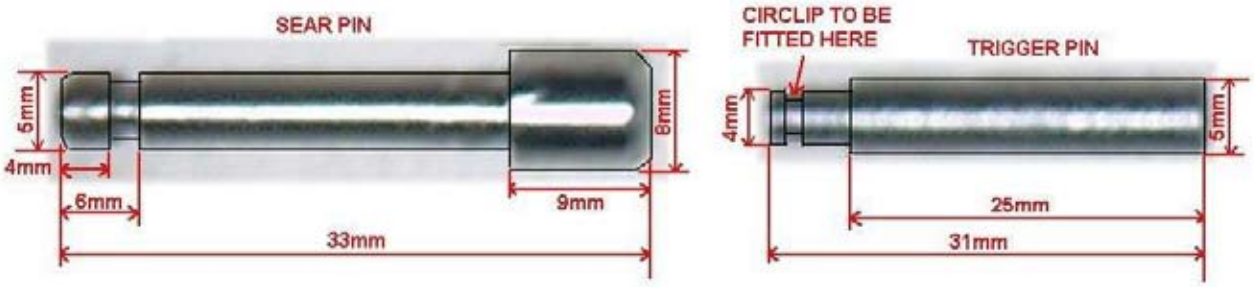
These parts are made from 10mm thick steel

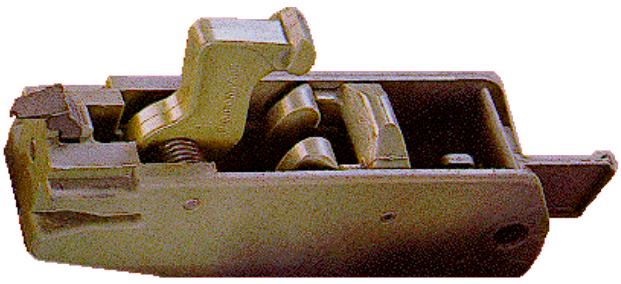


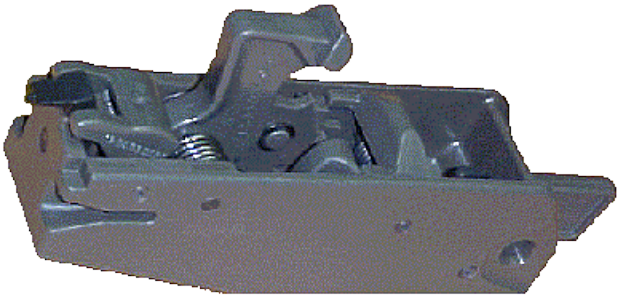
Now you can see why the holes where left at 3mm diameter. By placing the drill bits through the mounting holes and the trigger components you can check the profile of the components.

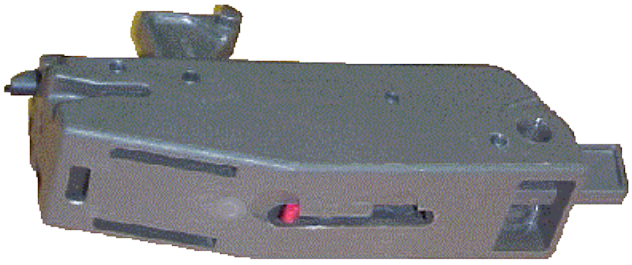
MAKING THE TRIGGER MECHANISM



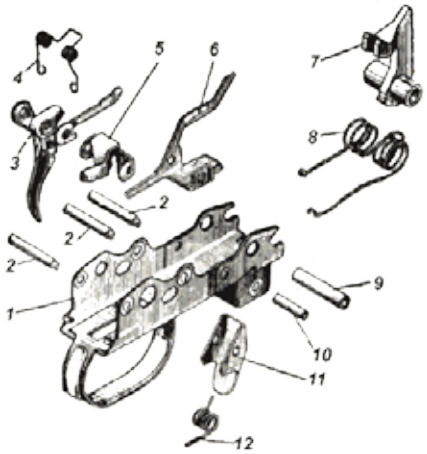








A few of you clever readers have jumped ahead a few steps... You are considering a modular fire control group, much like that found in the Dungerov SVD (below) and Styer AUG rifles (above). With a modular FCG, all pieces and parts and springs are mounted in a small, removable sheet metal container, and NO holes are ever drilled in the receiver. Thus, in theory, you could have a laminated bolt with a fixed firing pin for full-auto fun, and another bolt with the standard Orion semi-auto configuration; you could have a full-auto FCG and a semi-auto FCG. All of these components could be mounted on one Orion AK-47 receiver - and the bolts and modular FCGs exchanged as necessary. Because no holes are ever drilled into the receiver itself, no one would know the difference.



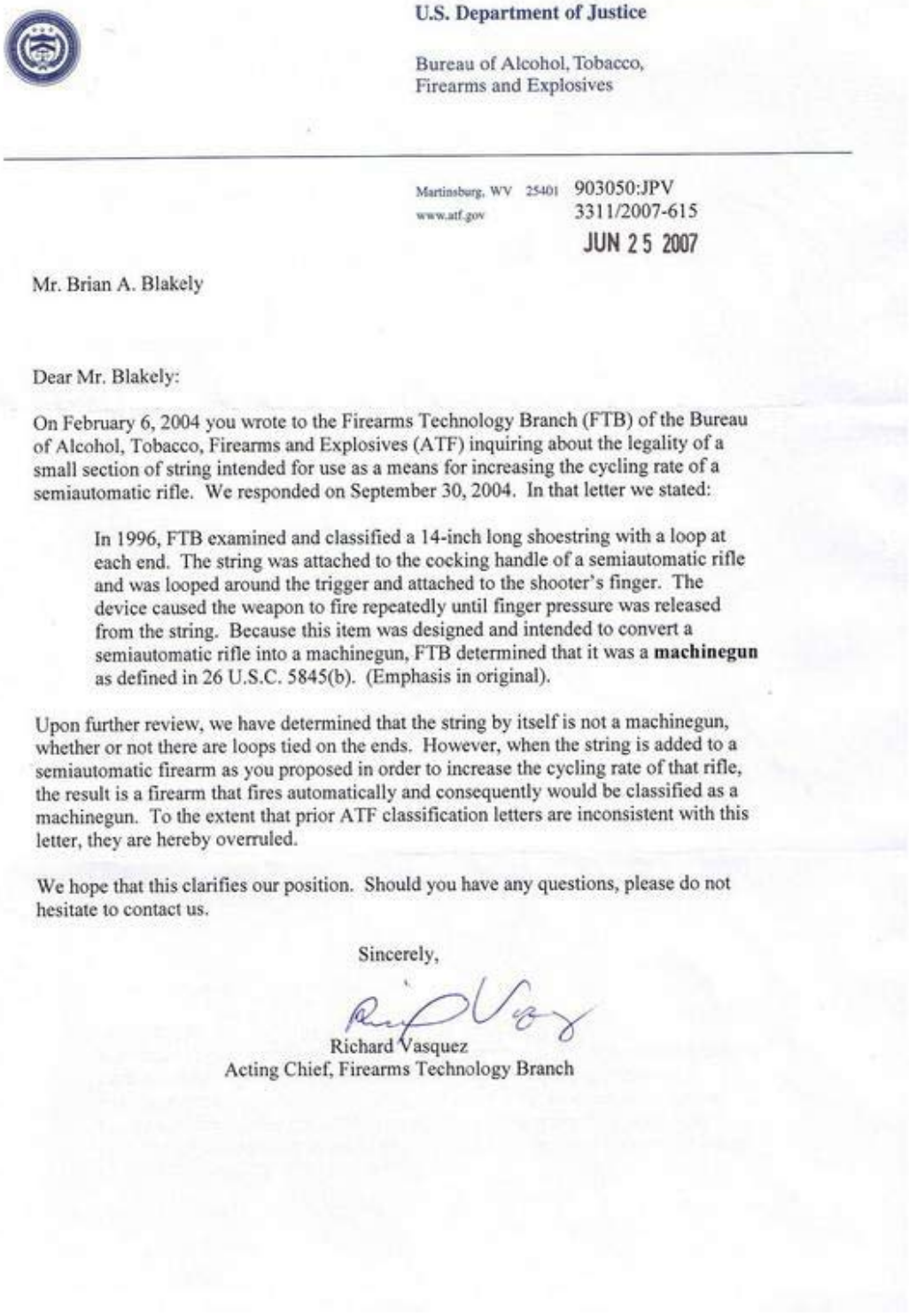
One Last Word Of Warning:

Make no mistake about the automatic weapon laws in your country, espeically if you live in the USA. For the most part, these laws make no sense whatsoever. Once prime example of this is the illustration above. In this case, we see a shoe string that, when pulled, causes this firearm to fire continuously until the shoe string is released. The shoe string you see, in the above illustration, is registered on a Form 4 and is transferred as a fully automatic firearm, (remember that the shoe string can be attached to any firearm, thus, the string in and of itself is the automatic component of the firearm; therefore, string is the part that is registered).

Registering a string, and paying a transfer tax on it is pretty silly, right? Well - let's apply this sillyness to you and your life. If you drill your Orion AK receiver to accept any of the full-auto FCG components, or if you make any of the full-auto FCG components on the previous pages, or if you cut out any of the FCG components and glue the template to a sheet of 1/4" sheet metal, then, my friend, you have "constructive possession" of a fully-automatic firearm.

Let me clarify "constructive possession": In the arbitrary opionion of some random bureaucrat , you might possibly at some time in the future decide to make a fully automatic weapon, and you have demonstrated that intention by beginning the sequence to possibly maybe manufacture one part of the fully automatic firearm.

Does that sound silly? I hope so - but make no mistake. It will also, more than likely, get you convicted as a felon for violating the NFA of 1934. Bottom line? Don't make any of these parts unless you are willing to go to prison for 10 years and live with a felony on your criminal record for the rest of your life.



U.S. Department of Justice

Bureau of Alcohol, Tobacco,
Firearms and Explosives

Martinsburg, WV 25401
www.atf.gov

903050:JPV
3311/2007-615

JUN 25 2007

Mr. Brian A. Blakely

Dear Mr. Blakely:

On February 6, 2004 you wrote to the Firearms Technology Branch (FTB) of the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) inquiring about the legality of a small section of string intended for use as a means for increasing the cycling rate of a semiautomatic rifle. We responded on September 30, 2004. In that letter we stated:

> In 1996, FTB examined and classified a 14-inch long shoestring with a loop at each end. The string was attached to the cocking handle of a semiautomatic rifle and was looped around the trigger and attached to the shooter's finger. The device caused the weapon to fire repeatedly until finger pressure was released from the string. Because this item was designed and intended to convert a semiautomatic rifle into a machinegun, FTB determined that it was a **machinegun** as defined in 26 U.S.C. 5845(b). (Emphasis in original).

Upon further review, we have determined that the string by itself is not a machinegun, whether or not there are loops tied on the ends. However, when the string is added to a semiautomatic firearm as you proposed in order to increase the cycling rate of that rifle, the result is a firearm that fires automatically and consequently would be classified as a machinegun. To the extent that prior ATF classification letters are inconsistent with this letter, they are hereby overruled.

We hope that this clarifies our position. Should you have any questions, please do not hesitate to contact us.

Sincerely,

Richard Vasquez
Acting Chief, Firearms Technology Branch

Unless you are willing to do the time....don't commit the crime. Again, I urge you in the strongest possible words to learn the laws of your country and abide by them. You live in a time when the strings on your shoes are considered machineguns - and they can land you a 10 year prison sentence.

Think carefully before you cut out those small pieces and parts, or drill that receiver.

Shhhhhhhhh.....

Pictured left is Mitch Werbell, developer of the original Sionics Suppressor.

Mitch was a fascinating person with an unique sales pitch: When he wanted to interest an investor in his company or invention, he would arrive at their office with a stack of phone books, and a briefcase. His procedure was to put the phone books on the floor, open the brief case, (which contained a Mac-10 submachine gun and one of his Sionics suppressors), load the weapon and empty a magazine into the phone books - right there in the office!

After 10-12 shots, with little or no disturbance in the rest of the office, the investor was convinced - and Mitch left with a smile on his face and some investment capital in his pocket. Pretty good return for just 12 bullets!

If you are going to build an AK-47, you'll probably want to test it. That may mean you fill up a few sandbags, and put them in the corner of your basement or garage and shoot into them. Well - if you plan to do that you better have a way to keep it quiet.

Below is one of the easiest suppressor designs I have ever seen. No - the photos and text are not mine, but I include them here as you may need to keep your new toy on the hush-hush, for a variety of reasons.

Again - don't be deceived - if you create a silencer and you do not have an approved Form 1 or Form 4 proving you have complied with the NFA of 1934 - you, my friend, are a felon.

You'll need some sort of plastic or alumnium bottle (aluminium is a good for soaking up heat which contributes to reducing sound levels). Choose one with a wide mouthpiece as it should be wide enough to fit a ½ inch nut inside it.

I like plastic because it's cheaper and easier to work with plus the lighter it is, the less chance of it drooping on the end of the barrel and being off center. The plastic thread on the lid is strong but the heavier the suppressor is, the more chance of it being unsecured.

Cut off the end of the bottle.

Take a stainless steel scourer and pull it apart to lengthen it out.

Cut a length of fine stainless or aluminium wire mesh.

Roll the mesh into a small enough tube to be able to fit inside the neck of the sports bottle.

Wrap some cardboard and/or tape around the end of the mesh tube so it will fit snugly in the mouthpiece end of the bottle.

Insert the tube.

Start packing the scourer material around the tube. The fine mesh will stop strands of the scourer poking through into the path of the bullet which could lead to it being snagged and damaging the suppressor internals.

The scourer material will disperse the hot gases eventually cooling them down. This will reduce the sound decibels from the shot as well as change the sound signature.

Either cut or drill a hold in the end of the bottle that you cut off earlier. The hole must be big enough to fit the tube of mesh through.

Fit the end cap back on with the tube of mesh just poking through so it can be supported.

Wrap some duct tape around it to secure it altogether plus a few layers around the front. The idea is to fire a bullet through the tape to make the exit hole. The first shot will always be quieter but you can always just put another bit of fresh tape over the hole.

The suppressor is designed to be disposable so don't bother wasting too much time and effort on it. It's amazing how effective this simple design is.

These two pictures show the silencer fitted to the barrel. A bolt is used to depict a barrel.

Can You Keep a Secret???

The general location of the pipe after the logging was done. It would have helped if I had had a better method of locating the pipe.

Here is the top of the pipe uncovered with the noose and winch attached.

Probably the best article I have found on the subject of long-term underground storage of a firearm was written by Charles Wood and was published by Backwoods Home Magazine. I have reprinted it here, and advise that you give it your careful consideration.

Source: www.backwoodshome.com/articles2/wood115.html

Bury a Gun and Ammo for 15 Years...
(And be Assured Everything Still Works When You Dig it Up)
By Charles Wood

Back in the early 1990s the outlook for the nation in general and gun owners in particular seemed rather grim to many people. A few years earlier in 1986, Congress had banned civilians from owning newly manufactured machine guns. There was ever more strident talk of banning semi-automatic weapons or so called assault weapons. Many of us regarded a semi-automatic rifle as the foundation of a home defense battery. Many of us believed that more laws banning ever more types of guns were imminent. About that time I acquired a Ruger Ranch Rifle through a private sale. I decided to stash it away in a safe place just in case my worst fear was to materialize, another gun ban.

The pipe was carefully sawn open to reveal that it remained watertight after 15 years underground.

First order of business was to decide how I would prepare the gun for long-term storage and where I would store it. I decided that for maximum security I needed to bury it. This would keep it safe from all but the most determined government goons. I set about finding an appropriate location. I live in a fairly remote, wooded rural area in the northeast. One day as I was walking in the woods I noticed a hemlock tree had blown down and been uprooted by a recent windstorm. There was a small crater about eight feet across and three feet deep where the root ball had been torn out of the ground. It occurred to me that this would be a good spot for my rifle.

Since I now had the location, I began preparing the rifle for storage. I bought a piece of 6-inch diameter schedule 40 PVC pipe, end caps, and PVC solvent from a hardware store in another town where I had never done business before. Being in a rural area where everyone knows everyone I didn't want to arouse any suspicions about what I was up to. I then disassembled the rifle and completely coated every metal part with a rust preventative oil intended for storing unused machinery in damp locations. This oil dries to form a waxy coating. I was extra careful that the bore was completely coated. I wanted to vacuum-pack the rifle as extra insurance against rust. As it turned out my employer had just taken delivery of a mainframe computer that happened to be wrapped in a large aluminized mylar bag for shipping.

The contents of the pipe, still in the protective wrapping.

All components were individually wrapped and sealed. The contents show no adverse affects after spending 15 years underground.

This proved to be the perfect material for my purpose. I discovered that with a warm iron I could fuse the edges of this material into a custom-fitted airtight bag for the rifle. I placed each individual component of the partially disassembled rifle in its own custom-made mylar bag with a small bag of silica gel desiccant to absorb any moisture present. Using my shop vac and an iron I managed to produce a professional-looking vacuum-packing job. The barreled action, stock, trigger assembly, hand guard, magazines, scope, and mounts all went into individual bags.

Since the rifle was so heavily preserved I knew I would need something to degrease it with when I finally retrieved it so I included two small cans of 1-1-1 Trichlorethane in the package. Also, since a rifle is of little use without ammunition, several thousand rounds of .223 were included. Because every well-maintained rifle needs to be cleaned and oiled occasionally, I added a cleaning rod, patches, Hoppe's #9 solvent, gun oil, grease, and owner's manual. A set of reloading dies was included as well. If dire circumstances required me to retrieve my rifle I wanted to be sure that I would have everything at hand necessary to put it into service. All of the individually wrapped components were sealed together into a larger mylar bag custom-made for the purpose along with a couple more medium-sized bags of desiccant. A few bags of ammo were taped to the side of this bag and the entire thing was wrapped in duct tape.
Additional ammo was packed into zip lock freezer bags.

With everything prepared I was ready to load the pipe. I first put in a large bag of desiccant followed by several bags of ammo, followed by the bag containing the rifle and supplies. Since there was some empty space surrounding the rifle, I dumped in some loose ammo just to fill the voids. More bags of ammo were then added to fill the pipe. Since I had a tank of nitrogen available, I also purged the air from the tube with the nitrogen before sealing it. This was undoubtedly overkill but I had it available so I used it. I took extreme care while using the PVC solvent to insure that the caps were perfectly sealed and watertight.

Finally, I painted the pipe black, and at this point, 15 years later, I'm not sure why. I loaded the sealed pipe in the back of my truck and drove up into the woods to the downed hemlock tree previously selected. With a post hole digger I dug a hole about six feet deep and a foot in diameter in the center of the crater left by the root ball of the tree. After gently placing the pipe in the hole, I carefully pulled the tree upright using a chain attached to my truck. By this time the tree had died and most of the needles had fallen off. Once returned to vertical it was pretty stable and a little dirt and debris shoveled around the edges did the trick. In any healthy, well-managed forest there are always a few standing dead trees, so this one would not arouse the curiosity of anyone who hunted or hiked there.

I never told anyone what I had done and I didn't write down the location anywhere. About five or six years later I had a timber harvest. I had my consulting forester mark the tree as a wildlife tree so it wouldn't be disturbed by the loggers. It was, after all, popular with the Pileated Woodpeckers. It has been 15 years since I buried the rifle and I have recently had another timber harvest. The tree was quite rotted by this time and it didn't survive the harvest. I had been keeping an eye on it, so when it finally fell I marked a nearby tree so I could find it again after the loggers left. Even careful logging causes quite an upheaval in the forest and it can be difficult to locate a specific spot after all the landmarks have been changed. After the logging crew had left it took me several days with a shovel and a rake to locate the rifle.

Use a quality grade axel grease. You want one that is acid free - like Castrol. Specifically, look for one that has effective anti-oxidants and corrosion inhibitors to provide extra stability under storage and extreme service conditions.

Lastly - don't allow the packet of dissectant to physically touch your firearm. The dissectant is designed for collecting moisture - if it contacts your firearm, the moisture will form rust on the weapon.

In hindsight, I should have had some additional way of locating it. Since the top of the pipe was about three feet below ground level, my old metal detector wasn't much help. I decided that it would be interesting to retrieve the rifle and see how well my storage plan had worked.

I managed to locate the very rotted stump beneath the logging debris and started digging. Once I located the top of the pipe I excavated around it about a foot on all sides and to a depth of about a foot below the top of the pipe. I attached a noose of polypropylene rope and used the winch on my truck and a convenient log to slowly pull the pipe out of the ground. After all these years the soil was still very loose around the pipe and it was relatively easy to pull it out. I could have accomplished it without the winch had it been necessary. After removing the pipe, I filled the hole with logging debris and covered it up with some loose hemlock boughs to prevent someone from falling into it.

Back at the house I hosed off the mud and prepared to saw the pipe open. Using a handsaw, I very carefully cut completely around one of the caps. I didn't want to damage the contents by being too enthusiastic.
With the cap removed it was immediately obvious that no moisture had gotten into the pipe. I carefully slid the contents out on to a table for examination. After unwrapping the duct tape and removing the outer bag, it was obvious that all was OK. All of the individual packages were unwrapped to reveal the contents were as good as the day they were packaged.
So if you think it is necessary, you can store a rifle safely for long periods in harsh environments. A little attention to detail, some scrounged materials, and a few dollars in supplies are all it takes.

As you scout a location for your stash, consider accessibility, but also think in terms of existing landmarks.

Burying your firearm near immovable local objects would be an easy way to locate it during a time of emergency. However, don't make it too easy to find, lest it be gone when you need it.

You might also consider a two-stage burial vault. In this case, an eight inch outer pipe is permanently buried in the location of your choice.

Next, a six inch pipe, which is sealed and contains your stash is placed into the larger one. In this manner, the smaller pipe can be quickly removed, and does not come into constant contact with the soil or moisture.

This also enables you to bury an exterior pipe first, and when it is safe to do so, return and stash your valuables permanently.

Consider marking your stash with a few pieces of non-native stone.

Stone is durable, can be buried so it is just visible to the naked eye and made to blend in with the surroundings. Stone that is placed directly above your stash, or placed in a circle around your stash will assist you in quickly retrieving your cache - but won't alert others to its presence.

Go for a nice, long walk sometime soon. I am confident you will find many local landmarks, that, when visited at night, will enable you to bury an exterior pipe. Later, when you determine it is safe, return with a sealed interior pipe and place it into the exterior one.

Your Creativity -

Often a lack of resources is Gods gift to you. Why? Because when you lack resources, you must use your own creativity. Don't be afraid to be creative - jump right in! Here is a great example of how you can solve a basic problem you may encounter when you build your AK-47.

Let's say you cannot purchase a 9mm barrel commercially. With a bit of research you will find that a 9mm barrel can be made from a length of Schedule 40 steel galvanized pipe. Specifically, you will want schedule 40 1/4inch steel pipe; also known as 1/4" ID (inside diameter) x 5/8" OD (outside diameter) seamless steel pipe; also known as 15.88mm x 3.25mm tubing; approximately four to six inches in length, or longer.

Here is the procedure I would recommend to make a 9mm barrel from a length of pipe:

1. Carefully inspect the pipe.

2. Make sure that there are NO cracks or other flaws in the pipe.

3. Check inside diameter of pipe using a 9 mm cartridge as a gauge. The bullet should closely fit into the pipe without forcing but the cartridge case SHOULD NOT fit into pipe.

Schedule 40 galvanized steel pipe is pretty ordinary stuff. I recommend cutting off the threading before you drill the end of the pipe and create a chamber for your 9mm cartridge.

4. To make the chamber for a 9mm weapon, drill a 25/64 inch hole; or 13/32 inch hole or 10.3mm diameter hole 3/4 inch (1.9 cm) into one end of the pipe. Use a cartridge as a gauge; when a cartridge is inserted into the pipe, the base of the case should be even with the end of the pipe. The barrel is now chambered for 9mm.

You could use this same procedure for any pipe that needs to be converted in to a barrel. Here are the sizes of pipe you would use for other calibers if you need to make a barrel:

--.22 Standard - Schedule 40, 1/8 inch inside diameter (ID) pipe.
--.45 auto rim, .45 colt - Schedule 40, 3/8 inch ID.
--9mm, .38 caliber, .357 magnum - Schedule 40, 1/4 inch ID. (For 9mm, drill with a 25/64" bit to fit casing)
--12 gauge shotgun - Schedule 40, 3/4 inch ID.

Once you can chamber a 9mm round in the pipe - you have a barrel! While far from perfect, this will give you the ability to create a working 9mm AK if no other means is available.

Keep in mind that this is just one example. As you begin to experiment, take it easy on yourself. Everyone has to start somewhere. The only people who never make a mistake are those who don't take a chance.

Here is what a correctly chambered 9mm round will look like. As you create your own barrel, you will want to use the cartridge as a guide. When the cartridge can be placed in a barrel and the base of the case is even with the end of the pipe, you have drilled the chamber to the correct depth.

You will note that the rim of the case is still exposed, which will enable an extractor to grab the rim and pull the spent case from the chamber.

One Final Thought -

Many of you, by now, realize that it is indeed possible to create the Orion's Hammer AK-47 in 24 hours.

To build your own AK, you could:

Take 24 hours off and work at a slow pace - and complete the pistol in the next 24 hours.

OR - you could do it in four 6-hour shifts - possibly completing it within a weekend.

Or you could do it in three 8-hour shifts and get plenty of sleep in between each shift.

Or you could wake up 1 hour early every day for the next month and spend 1 hour per day making your new AK.

Any way you slice it, 24-shop-hours is more than enough to make this pistol. Honestly, 24 hours is really overkill. You will probably only need between six to eight hours and you will have something that will go "bang".

Now that you KNOW it's possible to make your own pistol, some of you are grumbling.....You are saying things like "Yea, I can make my own gun...but it won't be as good as one that is professionally manufactured..."

Well - let's talk about that. I would like you to consider a pistol that was, at one time, professionally manufactured. In fact, between June 1942 until August 1942 over 1,000,0000 (that's one million) copies of this pistol were made by the Guide Lamp Corporation of General Motors Corporation.

It's the Liberator - a single shot .45 ACP pistol.

According to WikiPedia.org, the Liberator was originally intended

as an insurgency weapon to be dropped behind enemy lines to resistance fighters in occupied territory during World War II. A resistance fighter was to recover the weapon, sneak up on an Axis occupier, kill or incapacitate him, and retrieve his weapons.

The Liberator was valued as much for its psychological warfare effect as its actual field performance. It was believed that if vast quantities of these weapons could be delivered into Axis occupied territory, it would have a devastating effect on the morale of occupying troops. The plan was to drop the weapon in such great quantities that occupying forces could never capture or recover all the weapons. It was hoped that the thought of thousands of these unrecovered weapons potentially in the hands of the citizens of occupied countries would have a disasterous effect on enemy morale.

For just a moment, I would like you to compare the Liberator - a professionally manufactured firearm, with the AK pistol you can build for yourself.

If your country were invaded, tomorrow, by the Purple People - or the Green People - or whatever force you may be concerned about - and you had a choice between a single shot Liberator that was “professionally manufactured” and the AK pistol YOU made- YOU tested and that you TRUST - which would you rather have?

Yes - this is a straw-man arguement. I set up the straw man and then knock him down. OK - I’ll give you that - but please don’t miss my point. I have spent good money on crappy guns in the past. Guns that were professionally manufactured but that quite simply did not work. You could have them gunsmithed by the best in the industry - and they still did not work. No - I am not joking.

My point is simple: The laminated-bolt, sheet metal AK-47 pistol designed by Orion’s Hammer is cheaper and better than many “professional” firearms. It’s semi-automatic and in a common caliber. When times are tough, you can make several and give them to friends. You can spend what little money you have on ammo - and make your own guns.

I think if you were to make an honest comparison between the Liberator and the Orion AK, the AK would be your choice hands down.

Congratulations!

If you have read this far you are among the few. At this point, my guess is you are looking for answers - advice, help, wise counsel and wisdom. You are reading this entire text for a reason. You may live in a time of crisis. I understand - after all, sane, rational human beings don't typically read a book about home made firearms unless they have a need. Well, Dear Reader, if this describes you, then it is for you that I have saved the best part of the text for last.

Please read the last portion of this book with an open mind. Chances are good it will be different from anything else you have read, but the following knowledge will serve you well, especially in a time of crisis.

First, I have some bad news for you: If you are currently living, you will eventually die.

Next, I would like to ask you "The Million Dollar Question": Will you go to Heaven when you die?

Here's a quick test. Have you ever told a lie, stolen anything, or used God's name in vain?

Jesus Christ said, "Whoever looks at a woman to lust for her has already committed adultery with her in his heart."

Have you looked with lust?

Will you be guilty on Judgment Day?

If you have done any of those things, God sees you as a lying, thieving, blasphemous, adulterer at heart.

The Bible warns that if you are guilty you will end up in Hell.

That's not God's will. He sent His Son to suffer and die on the cross for you. You broke God's Law, but Jesus paid your fine. That means He can legally dismiss your case.

He can commute your death sentence: "For God so loved the world that He gave His only begotten Son, that whoever believes in Him should not perish but have everlasting life." Then He rose from the dead and defeated death.

Please, repent (turn from sin) today and trust in Jesus alone, and God will grant you the gift of everlasting life.

If you have not done so already, pray the sinners prayer. Use your own words, or use this example:

God be merciful to me a sinner.
O Lord, save my soul.
God I am a sinner.
I repent of my sins.
I believe Jesus Christ died for my sins.
I believe Jesus Christ rose from the dead.
I accept Jesus Christ as my Lord and Saviour.
Dear God, please save me and make me your child.

Lastly, read your Bible daily and obey it.

If you don't have access to a Bible, take comfort in these verses, quoted directly from God's Holy Bible:

Romans Chapter 3 Verse 23 Says: (Romans 3:23)
For all have sinned and fall short of the glory of God.

John Chapter 3 Verse 16 Says: (John 3:16)
16 "For God so loved the world, that he gave his only Son, that whoever believes in him should not perish but have eternal life. 17 For God did not send his Son into the world to condemn the world, but in order that the world might be saved through him. 18 Whoever believes in him is not condemned, but whoever does not believe is condemned already, because he has not believed in the name of the only Son of God. 19 And this is the judgment: the light has come into the world, and people loved the darkness rather than the light because their works were evil. 20 For everyone who does wicked things hates the light and does not come to the light, lest his works should be exposed. 21 But whoever does what is true comes to the light, so that it may be clearly seen that his works have been carried out in God."

John 1:12
But to all who did receive him, who believed in his name, he gave the right to become children of God,

John 3:16-17
"For God so loved the world, that he gave his only Son, that whoever believes in him should not perish but have eternal life. For God did not send his Son into the world to condemn the world, but in order that the world might be saved through him.

John 14:6
Jesus said to him, "I am the way, and the truth, and the life. No one comes to the Father except through me.

Acts 13:38-39
Let it be known to you therefore, brothers, that through this man forgiveness of sins is proclaimed to you, and by him everyone who believes is freed from everything from which you could not be freed by the law of Moses.

Romans 1:16
For I am not ashamed of the gospel, for it is the power of God for salvation to everyone who believes, to the Jew first and also to the Greek.

Romans 3:23
for all have sinned and fall short of the glory of God.

Romans 6:23
For the wages of sin is death, but the free gift of God is eternal life in Christ Jesus our Lord.

Romans 10:9-13
Because, if you confess with your mouth that Jesus is Lord and believe in your heart that God raised him from the dead, you will be saved. For with the heart one believes and is justified, and with the mouth one confesses and is saved. For the Scripture says, “Everyone who believes in him will not be put to shame.” For there is no distinction between Jew and Greek; for the same Lord is Lord of all, bestowing his riches on all who call on him. For “everyone who calls on the name of the Lord will be saved.”

2 Corinthians 5:17
Therefore, if anyone is in Christ, he is a new creation. The old has passed away; behold, the new has come.

Ephesians 1:13-14
In him you also, when you heard the word of truth, the gospel of your salvation, and believed in him, were sealed with the promised Holy Spirit, who is the guarantee of our inheritance until we acquire possession of it, to the praise of his glory.

Ephesians 2:8-9
For by grace you have been saved through faith. And this is not your own doing; it is the gift of God, not a result of works, so that no one may boast.

Philippians 2:12
Therefore, my beloved, as you have always obeyed, so now, not only as in my presence but much more in my absence, work out your own salvation with fear and trembling.

Colossians 2:13-14
And you, who were dead in your trespasses and the uncircumcision of your flesh, God made alive together with him, having forgiven us all our trespasses, by canceling the record of debt that stood against us with its legal demands. This he set aside, nailing it to the cross.

1 Thessalonians 5:9-10
For God has not destined us for wrath, but to obtain salvation through our Lord Jesus Christ, who died for us so that whether we are awake or asleep we might live with him.

Titus 2:11-14
For the grace of God has appeared, bringing salvation for all people, training us to renounce ungodliness and worldly passions, and to live self-controlled, upright, and godly lives in the present age, waiting for our blessed hope, the appearing of the glory of our great God and Savior Jesus Christ, who gave himself for us to redeem us from all lawlessness and to purify for himself a people for his own possession who are zealous for good works.

1 Peter 1:8-9
Though you have not seen him, you love him. Though you do not now see him, you believe in him and rejoice with joy that is inexpressible and filled with glory, obtaining the outcome of your faith, the salvation of your souls.

For those who would like to get in touch with me, you can use the following email address:

orionhammerfan@gmail.com

If you have something positive to say about the Orion AK-47 design - please direct it to Orion's Hammer using the forum at www.weaponeer.net.

If, on the other hand, you feel that only Satan himself could write a document like this - if you feel the need to vent or inject venom into someone and focus your rage- well - I am the one you are looking for. Orion had nothing to do with this document. He is innocent - he only came up with the design, and like all great designers, has no control over how his creation is used or who writes about it.

I did not include my real name on this document because I am not seeking to take any credit for this design - that glory belongs to Orion and to him alone. On the other hand, I'm also not hiding from you or your feedback. If you have something to say, I am here and I am listening.

Again, if you have something good to share or contribute, please do so with the firearms community as a whole; www.weaponeer.net is the place to accomplish this.

Thank You

-Jack

Cash Bailey, (Powers Boothe) and Jack Benteen (Nick Nolte) star in the 1987 movie Extreme Prejudice. The two play childhood friends who have gone their separate ways; one south of the law, the other the way of the Texas Rangers.

Would You Be Willing to Help Me?

At the very beginning of this document I wrote you a personal letter...and I made a bunch of promises.

Have I kept them?

I believe I have...I have told you everything I could....You now have the knowledge, and the ACTION is up to you. If you want a working AK then it's time to put thoughts and ideas into action - to move your hands and your mind.

If this information has been useful or helpful to you in any way, and you would like to help me in return, then I would like to ask you a favor. This information simply would not have been available, to you or to me, without one website:

www.weaponeer.net

If you want to help me, then go to www.weaponeer.net, and click on the "Paypal" button - it's right beside the word "Donate".

No - the money won't go to me. It will, however, directly benefit the individuals who brought you this information; who took the risk and spoke out when no one else would.

Please help. I have given you everything I could - free of charge.

Now it's your turn. Five dollars, (USD) won't kill you. If you have access to the internet, then you are likely paying for that service. Please contribute to the free-flow of information, (which isn't free, by the way), with your dollars.

Five bucks won't break anyone's bank account, and it really would make a difference. Thanks in advance for your contribution... I sincerely hope you enjoyed this article, and your new AK.

Warmly,
-J.B.

As any technology matures, everything about it becomes cheaper, faster and easier - homemade firearms are no different. Laminate Bolt Technology is the most significant innovation to impact homemade firearms in the 21st Century. When Bill Holmes first introduced his amazing series of books, Home Workshop Guns for Defense & Resistance, Vol. I in 1976, the reader was required to be a machinist and have access to a metal lathe and verticle milling machine to complete his designs. Now, with Laminate Bolt Technology, you need only have access to a hacksaw, 24 hours and and a willingness to learn in order to make a semi-automatic, high-capacity AK-47.