

# A BEGINNER'S GUIDE TO MAKING MIND BLOWING PROPS



BILL DORAN

**A Beginner's Guide to Making Mind Blowing Props**

by Bill Doran

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# ABOUT THE AUTHOR

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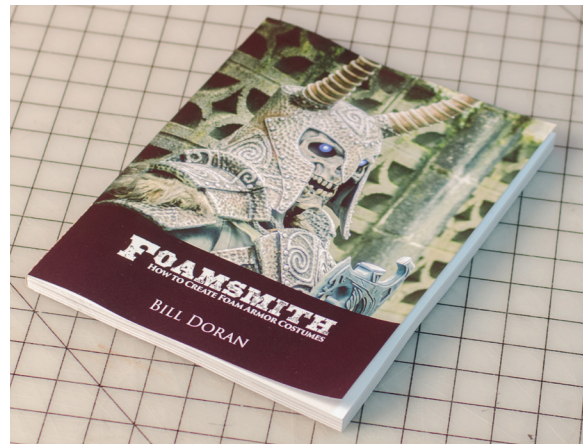
Bill Doran is a prop and costume maker, owner of Punished Props, and the author of *Foamsmith: How to Create Foam Armor Costumes*. He's been building replica props and costumes since his friends convinced him to cosplay with them back in 2009. This opened up an entirely new world of creativity and soon Bill carved out a tidy little career as a prop maker.



Bill founded Punished Props in 2012 and took his passion for prop making full time, quitting his job in corporate America. Since then, he's built amazing prop replicas for clients all around the world! Along with building incredible things, he also shares his knowledge in detailed blog write-ups and full video tutorials. That passion for instruction led him to write several books on the subject including *A Beginner's Guide to Making Mind Blowing Props* and this *Foamsmith* series!

Nowadays, you can see Bill all around the world at costume and pop culture conventions, spreading his knowledge to those who wish to expand their skills.

Look for [Foamsmith: How to Create Foam Armor Costumes](#). The armor book has everything you need to create amazing costume armor from lightweight, low cost EVA foam.



# SAFETY

I'm not going to lie to you, crafting can be a danger to your personal well being. The list of things in a shop that can hurt, poison, maim, or kill you is pretty long. If you took shop class in high school, then you know what I mean. This is by no means a reason to not do it, but remember that safety is paramount! Here are a couple of tips that will keep you safe while you create your epic masterpieces!

- Read all warning labels on any type of chemical, resin, adhesive, or paint that you are using.
- When necessary, work in a well ventilated area.
- Go buy a respirator right now and always keep the filters fresh.
- If things smell toxic, you're doing it wrong.
- Loose clothing and long hair are crazy dangerous around spinning tools, keep tidy!
- The \$5 you spend on a pair of safety goggles WILL save your eyes from damage. Go get a pair right now and use them. Normal glasses are useless for protection.
- Another \$5 on a pair of leather gardening gloves will keep your fingers from getting lacerated, punctured, or burned from all but the most dangerous of tools. Spend the money!

## GETTING STARTED & BEGINNER'S TIPS

You've seen some amazing costumes and props at Dragon\*Con and you would really love to be a part of that incredible community, but you have no crafting experience and no idea where to start. Let's dig in and get a grasp on how you're going to go from a noob to a cosplay god!

Pick something that is appropriate for your skill level. There is no shame in being a beginner. Believe it or not, nobody goes to school to be a professional prop maker, so everyone started off without a shred of knowhow. It is perfectly OK for your first project to be something that doesn't have a lot of detail! The worst thing you can do right off the bat is pick an overly ambitious project that is well beyond your skill level, get completely frustrated that it isn't turning out the way you planned, and just give up on it, never to craft again. A fun and easy project to [begin with is a repaint of a toy](#). I bought a Han Solo blaster toy, sanded it, and painted it to look like the real deal. All it took me was a couple of hours, some sandpaper, and a little spray paint. What I ended up with was a finished piece that looked pretty good, as well as a handful of new skills that I still use today!



If you find yourself way out of your depth on a prop build, there is always the option to commission someone else to help finish something you're having trouble with. You can even buy a blank plastic resin kit from someone on the internet! This is a huge time saver and you get to practice your painting skills on an already built piece.

## **BUDGET YOUR COST**

Unless you have your own sugar daddy/momma, you'll probably be funding your crafting projects with personal disposable income. While my goal here is to get you up to speed as cheaply as possible, remember that you may need to buy new tools. If you don't have any tools, then you will likely end up investing a couple hundred dollars into a good starting set. If you have a friend with tools and a shop space, buy them a six pack of beer and trade some shop and tool time!

Also bear in mind that you may end up accidentally destroying your project. This happens to the best of us. A catastrophic prop meltdown is the fastest way to double your monetary cost.

Add up your material and tool costs for the build and then assume it will probably cost twice as much as that. Set aside that cash for the build. There is nothing more heartbreaking than being a week away from a costuming event and realizing that you just can't afford the cost to get it finished in time.

## **BUDGET YOUR TIME**

Even more costly than the money you dump into a build is the time. You can always earn more money, but you never get time back! The best thing you can do is to make sure that you spend your crafting time wisely. Even if you lose an entire day worth of work to a mistake or accident, you need to learn from that slip-up and never do it again. The only way time is completely wasted is if you keep making the same mistakes.

If you have a deadline, and you usually do, budgeting your time becomes extraordinarily important. For most of us, the deadline is a convention that we plan on taking our shiny new costume to. My rule of thumb is to figure out how long you think it might take to build your project and then double it. It isn't uncommon to start a costume a full 6 months ahead of time. This way you don't end up rushing it in the last week before PAX.

There is no penalty for finishing a project early!

## **GATHER REFERENCE IMAGES**

I am a freak about reference images. Google Image Search is one of the very best things that the internet has provided to crafters. Always start there and filter by the largest images possible. Most of the time you will find everything you need in just a few minutes of searching. If you can get orthographic views of an object or a character costume turnaround, then you've hit pay dirt! Remember that hard drive space is cheap and jpegs are tiny, so download all the images!

If Google Image Search lets you down, then you may have to turn to some more tricky methods. Pulling screenshots from YouTube works sometimes if you are lucky, just be sure to grab them from the highest resolution source video as possible. If it's movies or TV that you're scouring, getting a blu-ray copy into a PC will

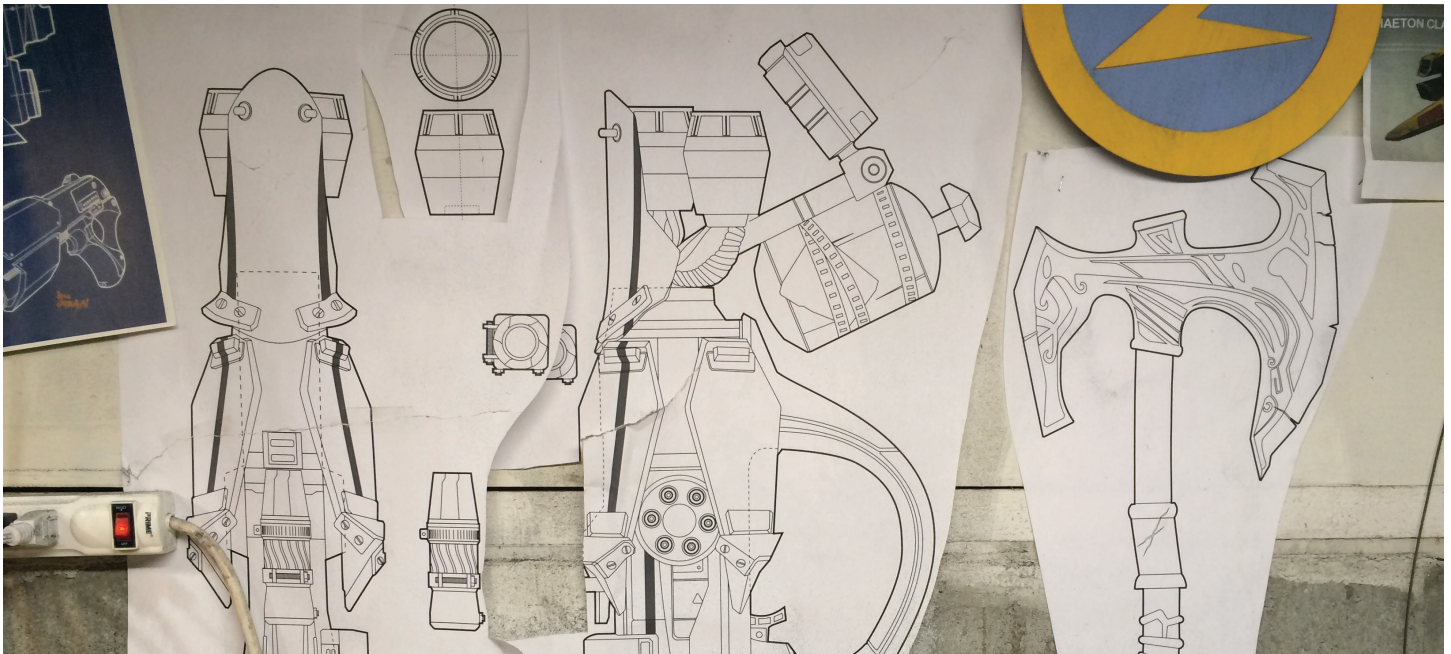
yield the most remarkable results.

For video games, getting your grubby mitts on the actual 3D models from the game is absolutely magical. Actually doing this can be a technical nightmare though, so before you dig into a game's data files, check online and see if someone else has already done it! Also see if you can find the personal web pages of the concept artists for your favorite games. Those guys tend to be super detail oriented artistic sorcerers.

The bottom line here is that no detail is too small to spend the time sourcing a good reference image. In this case, more is always more!

## DESIGN AND SCALE YOUR PIECES

I always [draw up detailed schematics and blueprints](#) for all of my prop builds, but it isn't always necessary. Most of the time, a decent pencil drawing can be enough to get you 99% of the way there. The important thing to remember is that the object or costume piece might be a different size in real space than it appears to be on the TV screen. Getting it all down on paper at the size you plan on building it will save you a lot of frustration two weeks down the road!



The other thing to consider, especially with costume builds, is that you will end up making several separate pieces and then assembling them when they are finished. There is nothing more tear jerking than to put all of your costume parts on and realize that one or two of the parts are way too big, way too small, or don't fit on your frame. Having good measurements will alleviate most of these types of problems.

You've got a grasp of the basics and you know what it is you want to build! Let's dive into the many building materials that you can use to put together that wonderful piece of awesome that's cooking in your head!

# MATERIALS

## MDF Wood

Medium Density Fiber wood is an incredible material for beginners and pros alike. It is crazy cheap and readily available in various thicknesses at your local hardware stores. It can be glued with wood glue and sealed easily with super glue. There is no wood grain, so it sands and shapes very easily! I use this all the time in my gun builds when I am doing a “slicing” build (explained later).

There are a handful of downfalls to MDF, however. It does not like to get wet. The stuff is basically a sponge and, unless properly sealed, it will disintegrate when exposed to moisture. Also it has something called “formaldehyde” in it. You know, that stuff they use to embalm dead bodies. Sanding and shaping it will kick up some pretty nasty dust, so be sure to use your respirator. Bear in mind that it is pretty heavy and won’t hold a fine detailed edge either.

## Hardwood

Also readily available, though at a steeper price, are your various hard woods. This is my go-to material for thin sword blades. There’s nothing like a thin piece of poplar to shape a nice straight blade from. It’s extremely strong, takes glue well and can be stained or painted to make a very nice looking final product.

The bad news is that it is a bit more difficult to manipulate than something like MDF. Hardwoods have a grain in them that can be a bit of a headache to deal with.

## EVA Foam

[Ethylene-vinyl acetate foam](#) is hands down, one of my very favorite things to work with. You might know it as “craft foam” or “funny foam”. You can get EVA at most crafting stores in 2mm and 6mm thicknesses. This stuff is stupid cheap. Buy it by the roll if you can. You know those foam floor mats that they sell at hardware stores? The ones that look like puzzle pieces with a texture on one side? That’s EVA foam. In fact, those floor mats are the go-to material for most sci-fi armor costumes! I built an entire Mass Effect set of armor from about \$20 in SCRAP floor mats!

The very best thing about EVA foam is how easy it is to work with. It comes in varying thicknesses and is both flexible enough to be formed into complicated shapes and rigid enough to take some abuse. The only tools you need are a knife and some super glue. You can knock out some amazing pieces fairly quickly for very little cost. I’ve even seen many folks making their own swords and weapons from just a few dollars worth of floor mats!

The only downsides are that it is difficult to fill in gaps and sand. Also you can’t really count on the foam to provide any sort of significant structural support.

## Insulation Foam

Also known as polystyrene foam, insulation foam is the rigid stuff you can pick up in any hardware store. It's cheap and comes in several thicknesses in large boards. It is super lightweight and a snap to cut. You can form it with a rasp and sandpaper. This is the medium of choice for making your crazy gigantic anime swords.

Now for the bad news. Many types of glues and some paints/solvents will straight up turn your project into a puddle of goo. Be wary when choosing something to cover it with and always test it out on a scrap piece of foam. It's also quite brittle and will not hold a sharp edge at all. It's also very difficult to get any kind of intricate detail out of insulation foam, so keep that in mind when picking out your materials.

## Cardboard, Poster Board & Foam Core

All of these materials are cheap, readily available, and easy to work with. I usually use spare cardboard to make templates before cutting pieces out of more sturdy, expensive materials like styrene.

## PVC Pipes

You need a gun barrel? PVC Pipe! BAM! Sword handle? PVC!! A gun scope? PVC pipe in different thicknesses with some size adapters! Bazooka!?! GIANT PVC PIPE!

Are you getting the picture here? Nearly any sort of cylindrical piece can be crafted quickly and cheaply from PVC pipe acquired from any hardware store on the planet. It comes in a myriad of sizes along with an absurd amount of connector pieces. It is ungodly strong and glues very well.

There are a couple of things to keep in mind. Some of the more unique pieces and sizes can be a bit pricey. Also, PVC can be a hassle to paint and for crying out loud, don't try to head bend it. It'll just collapse on you. Also also, if you do heat it up so much that it starts turning brown, it's releasing chlorine gas and trying to kill you.

## Styrene

This is my go-to plastic for my "slicing" technique. That long with some MDF and PVC pipes and you can make just about any sci-fi gun that you can dream up! It comes in plenty of sizes, shapes, and patterns, though you may need to order it online. If you're in a pinch you can pick up those "for sale" signs at a hardware store, they're usually made from styrene.

This rigid plastic holds an edge like nobody's business. It can be heat formed, glued, sanded and painted with some amazing results. My main tool for working with styrene is a \$5 craft razor blade.

The only downside is getting your hands on styrene sheets in moderate sizes. If you're like me and have a local Tap Plastics store, you're golden. Elsewise you'll have to [look online](#) or at a hobby store.

## Sculpey

Right off the bat, just go ahead and get Super Sculpey. It isn't too expensive and is far superior to the standard rainbow colored varieties. Armed with a handful of sculpting tools and a brick of Super Sculpey, you'll be prepared to make some extremely detailed pieces! This clay-like stuff is easy to work with and you have unlimited working time. The only thing you need to cure it is a kitchen oven!

I would not recommend using Sculpey for any sort of structural pieces as it is quite brittle. Also, if you end up using it a lot, I would recommend getting a pasta roller type tool to flatten and knead your raw material before starting to sculpt it.

## Bondo

Another hardware store gem is [Bondo's automotive filler](#). You can get a gallon of it for like \$20. When I'm working with any sort of rigid pieces that need gaps filled, I go straight for this wonderful material. It is a gray, viscous goo that you mix with a hardening agent and apply to your working surface. Usually you get about 5 minutes of working time before it sets up. It's easy to shape & sand and takes paint very well.

The down side? It's toxic and it's messy. Always wear a respirator when mixing and applying the goo. Also bear in mind that the dust it kicks up while sanding is equally terrible, so a dust mask or respirator is a must. Don't wear your nice pants while working with it either; it gets everywhere!

## Paints

Paints come in such a variety of types that I could write a whole other book on just them! For simple stuff, you can usually get away with spray paint from the hardware store. I also like enamel paints from hobby stores for more specific colors and finishes. Also, for weathering I prefer to use acrylic paints, commonly available from all crafting stores. Metallic details can be done with Rub 'n Buff, a metallic, wax based paint available at craft stores.

## Super Glue

[Good old cyanoacrylate](#)! I like to pick it up in bulk at the local hobby store. You can even get some types with a spray catalyst that cures it instantly. If you're working with EVA foam, this is a MUST!

Be careful about getting it on your skin as it has a tendency to adhere that the best. There are debonding agents available and I recommend picking up some of that for whenever you do glue yourself to yourself.

## Epoxy Glue

This is another something that you can nab from the hardware store. It comes in a [5 minute curing version](#) that I like a lot. You mix the two parts together and use it to adhere two things together. It works good on most surfaces, especially plastics.

## Masking Tape

Along with paint, you'll want to get some of that crazy cool blue painter's tape for masking of pieces that you're painting. You can also use it to temporarily hold pieces together during assembly.

## Worbla and Wonderflex

Both of these thermoplastics are really great for creating armor and costume pieces. They are thin and relatively light weight. You can cut them with scissors or a craft knife and they take very well to being heat formed.

## Nylon Webbing

Often referred to as “[nylon straps](#)”, this material can be procured from most craft stores in various thicknesses. As far as creating functional belts and straps for costume pieces, this stuff cannot be beat! It responds very well to hot glue and usually has corresponding buckles and clips available!

Now that you’re armed with an arsenal of building materials, let’s dig into what we’ll need to start shaping them into something incredible!

# TOOLS OF THE TRADE

This is a short list of the many tools that are used in prop and costume making. I’ve tried to narrow it down to the bare minimum that you would need to get started, with a couple of more advanced options added for good measure.

## Dremel/Rotary Tool

Do yourself a huge favor and spend the cash on a [good rotary tool](#). I’m sure that you can find a decent used one on Craigslist. I use mine every single day. You can drill, sand, shape, carve, and engrave with one of these amazing tools.

## Craft Knives

I keep a variety of knives around the shop and always have a stock of replacement blades around. An x-acto knife will do 99% of what you need, but I also keep a drywall knife around for handling bigger stuff and because the replacement blades for that are insanely cheap.

## Files

Both big and small, [using files to get good](#), hard edges on your props will mean the difference between a pretty good finish and something that really draws in the “oohs and ahhs”. Plus you can nab a good set of them for only a fist full of dollars.

## Clamps

You can never have too many clamps. In fact, I am always running into situations where I don’t have enough! You can get them in many form factors on a sliding scale of cost, so you (and I) have no excuse not to stock up!

## Sanding Block and Sandpaper

A healthy amount of sanding makes all of the difference when crafting a prop that you want to stand out. A cheap sanding block that is constantly replenished with fresh sandpaper will reward you immeasurably.

Keeping an ample supply of sandpaper in varying grits is an absolute must. I usually keep grits in 100, 200, and 600 flavors around for the usual stuff. You get it much higher too if you need something to be silky smooth!

Lastly, look into getting some sanding sponges. They extremely useful for sanding all of the little nooks and crannies.

## Coping Saw/Jig Saw/Scroll Saw

All of these saws do pretty much the same thing with varying degrees of scale and accuracy. Even though my scroll saw is the workhorse of my shop, I still use the coping saw every single day; it is a must have.

## Strait Edges

Not only can you measure things with a metal ruler, you can also use it to cut things in straight lines! I also have an amazing see-through plastic ruler for most of my measuring. Do yourself a solid and don't cut things with the plastic ruler. That's what the metal one is for, so get both!

## Cups and Popsicle Sticks

Both are available anywhere things are sold and they are cheap! The primary purpose is for storing and mixing liquids, but you can also never have enough containers. Stock up!

## Hot Glue Gun

[This is the unsung hero of the professional prop maker's shop.](#) It may seem like something that you would relegate to a 9th grade macaroni art project, but hot glue is serious stuff. It takes to foam and vinyl like a beast and is super easy to use. You can also use it to simulate metal weld lines!

## Paint Brushes

These are definitely the sort of thing that you can get in bulk at a craft store. Many times you'll end up throwing them out after a single use, so get more than you need.

## Sculpting Tools

You can pick up a pre-assembled kit of tools or one at a time from any craft store. I even made a whole set of my own from dowels, wire, and plastic! If you really like that Super Sculpey, spring for a good set of tools and you will be thanking yourself!

## Rubber Gloves

You will get dirty when crafting epic props and costumes. It's just going to happen. To mitigate the damage to your public image, keep some rubber gloves on hand, especially for when you're dealing with anything toxic.

## Power Drill

While this is a beginner's guide, I wouldn't feel right without including some power tools. This is the most basic of the powered shop tools and I couldn't go a day without it. You can not only drill holes with it, as the name would suggest, but you can also do things like put a drum sanding bit in it for shaping parts.

## Heat Gun

If you plan on doing any sort of heat forming, [you will need one of these guys](#). I got mine for crazy cheap at a hardware store and use it all the time. Be sure to use a thick leather glove on the hand that is holding the piece you are heating or else you could end up cooking your paw!

You are now stockpiled with all of the ammo you need to make some amazing things! Let's talk technique!

# BUILDING TECHNIQUES

You have a project picked out? You got all of your materials? Your shop is bristling with shiny new tools? Fantastic! Let's talk out some basic techniques for building your super cool new costumes and props!

## Slicing

This is my go-to technique for building space guns. I start by figuring out how thick the gun is and then building from the middle out, sleuthing out different 2D "slices" of the form. Usually this includes different thicknesses of materials. [I use MDF in ¼", ⅜", and ½" thicknesses](#) for the thicker slices, usually near the middle of the prop. Then, as I move out to more detailed levels I use thinner stuff like styrene.

Each layer is adhered to the one below it with the appropriate glue. For MDF, wood glue will do nicely. For plastic I like to use a 2 part epoxy. Be sure to clamp the layers together and let the glue dry completely before working on the next layer.

This technique is fantastic for crafting anything that has sharp geometric shapes. If the piece also includes any round or organic forms, you can usually shape those by carving, sawing, and sanding them after all of the slices have been attached.

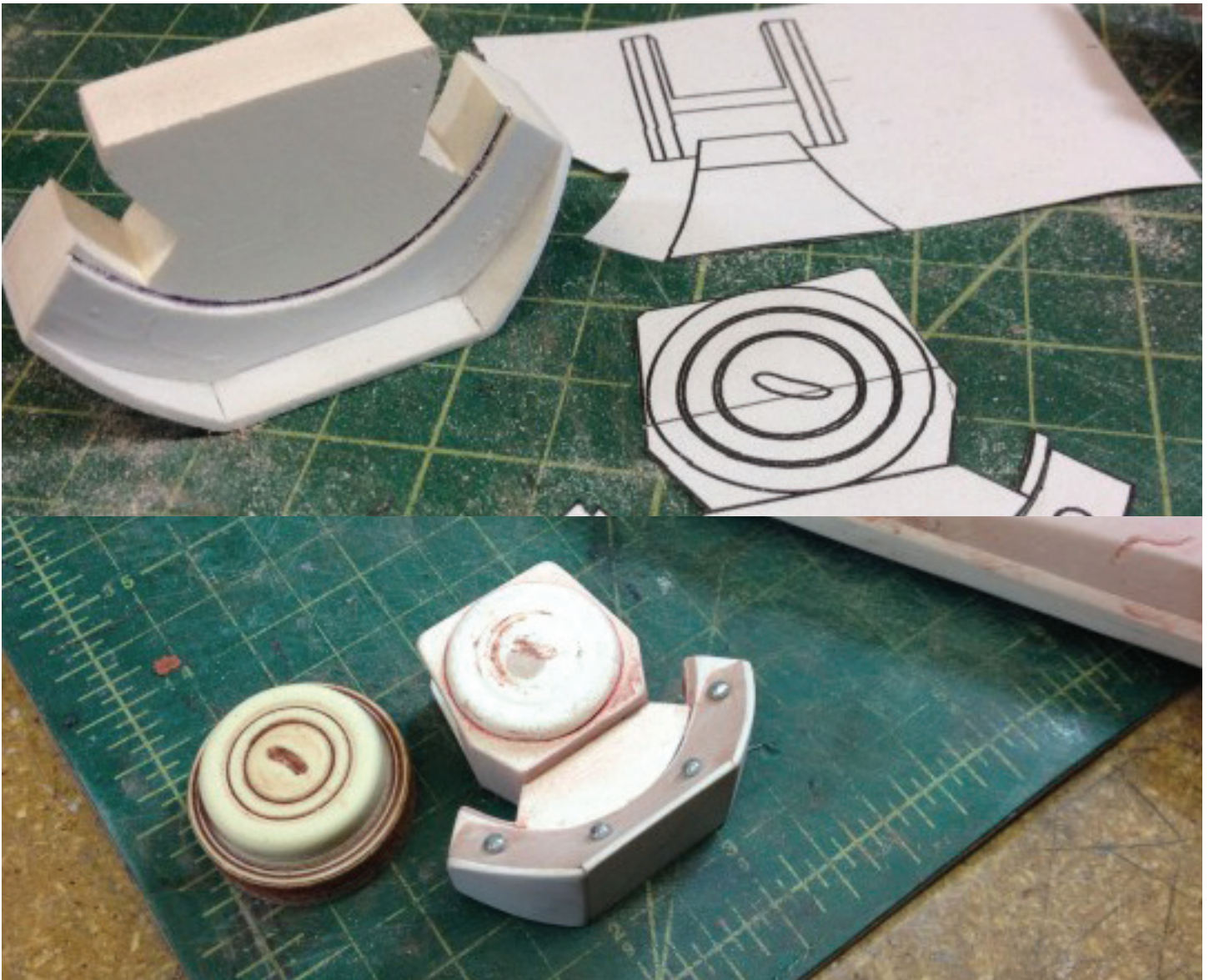
When all of the layers are together, you can use your Bondo to fill in any gaps and sand it all down to a nice, smooth finish!



## Block out and Fill

When a piece requires a bit more minute detail, especially if it's a smaller piece, I like to block out a little skeleton in MDF or styrene. That skeleton shape can then be filled in with something like Bondo. This technique allows you to be a lot more exact with your edges and detail pieces.

This technique is great when you have a profile shape that you need to follow. Something like the spine of a gun or sword hilt. You can cut the spine contour out of a thin piece of styrene to guide the filling. Or you can use this as a means to fill in beveled edges. You use the thin material to create a cavity and then back fill it with Bondo!



## Pepakura

Never has there been an [equalizing force in the world of crafting](#) quite like Pepakura. To get started, you do need a computer and an internet connection. Look up "[Pepakura Designer](#)" and install that bad boy! It is completely free unless you want to create your own "pep" files. Even then it's a shockingly low \$30.

The gist is that you take a 3D computer generated model of an object and Pepakura Designer flattens it out into a printable pattern. This pattern can be printed on a standard sized inkjet printer on cardstock. You can then cut out this pattern and assemble the entire thing yourself with a little glue. I've seen people make everything from helmets and guns to armor and swords out of pepakura files!

The tough part is getting your hands on the models. Sometimes people will straight up convert in-game 3D files to pepakura, with the textures included! If you do a Google web search for "xxxxxx pepakura" where xxxxxx is the name of the object that you want to make, there is a good chance you'll find the files available!

You might also try lurking in the official forums of whatever video game you are trying to replicate a piece from. If you are extremely tech savvy, you can rip the 3D models yourself and convert them to pepakura files, but that is a whole other can of worms!. The Replica Prop Forums is also a great place to look and ask for pepakura files.



Even if you can't find files for the object you want, I highly recommend trying out some pepakura for yourself with whatever files you can find. It is a lot of fun and a very satisfying building experience.

## Foam Armor

If you spend any time talking to someone who has made a full set of [Mass Effect armor](#), you'll start to think that EVA foam floor mats were handed down to mortals by Zeus himself. I tend to believe it myself. The foam has a texture on one side that mimics the carbon fiber look that so many sci-fi armors tend to have. The non-textured side is smooth for the parts of your armor that need to look like flat metal or plastic.

The most tedious part of making armor from foam is the templating process. If you're lucky, someone has already made template files for you to follow. This is true for some of the more popular armor sets from Mass Effect and Halo.

If you can't find already made templates, then you will have to make your own from scratch. This is where having detailed designs and measurements becomes a huge boon to your progress. You will need to take measurements from all of the parts of your body that will be covered in armor. It is usually a good idea to make a piece bigger than you think it needs to be. The thickness of the foam floor mats has a tendency to throw off your measurements a bit.



The base level of your armor can all be done with the thick floor mats. You will end up doing a lot of heat forming with your heat gun. For the round shapes, you can heat up the foam and push it around a round form like a large PVC pipe. A lot of your work here will be trial and error, so don't get too frustrated if you don't get it right on the first try. Also buy a lot of extra floor mats!

For adhering the foam to itself, nothing works quite so well as contact cement! I've done some independent testing and can confirm that the glue bond is in fact stronger than the foam itself. For a full set of armor you will need a lot of glue, so stock up!

The detail work on most foam armor builds is done by dremeling groove lines into the foam with a thin grinding bit. Be sure to take your time when carving lines into the foam because you can't fill in any mistakes. I like to practice a whole bunch on a scrap piece of foam, especially for any complicated curves.

The raised detail pieces on your armor can be accomplished with the thinner EVA "craft" foam. Since it comes in 2mm and 6mm thicknesses, you can alternate between the two to get some really nice detail variations. Be aware that the textured side of the foam floor mats likes to be roughed up a little bit with some sandpaper before supergluing anything to it.

Another issue that people tend to have with their foam builds is getting good clean edges where two pieces of foam floor mats meet. First, make sure that the edges are cut nice and straight with a new, sharp razor. Then make sure that the two corresponding edges meet up nicely. Then apply a generous amount of contact cement to the cut faces of both of the pieces. Let the cement dry for 5-10 minutes, until it is no longer shiny. Then carefully touch the two edges together. You'll find that the surfaces bond instantly! Continue pushing the faces together until the entire seam is glued together perfectly!



Fantasy armor can be done in much the same way as the sci-fi armor. The major difference is that you will tend to use the smooth, non textured side of your floor mats. Any kind of detailed filigree can be achieved with your thin pieces of craft foam.



If there are any armor pieces that you can source pre-built, jump at the chance! I really like rubber concrete boots from your local hardware store for my sci-fi armor footwear. You can also get some really gnarly futuristic looking gloves from the electrical section of the hardware store. Existing helmets can be modded with foam to look both futuristic and fantastical. Lastly you can get some torso coverings to use as a good base in the form of a dirt bike chest protector.

Your foam armor can be painted easily with spray paint, but you might have some trouble getting masking tape to stick to it, so be patient. You can also paint on smaller details with a brush and some model enamel paints. I don't tend to do a clear coat of paint on the foam armor, because I like the weathered look you get if some of it wears off.



Finally, a good set of armor won't do any good if you can't keep your pants up! Nylon webbing comes in a good 2" thickness that will do an excellent job of both keeping armor pieces attached to your torso and keeping leg armor pieces from sliding down your thighs.

## FINISHING AND PAINTING

A really amazing prop isn't going to earn you any geek cred at Dragon\*Con without a really fantastic paint job. Laying down some color on your finely crafted prop or costume is the last and most important step!

## Patience Pays Off

Don't worry, we've all showed up at a convention with a sword that still smelled like spray paint. It's almost like a rite of passage. After you've gotten a few projects under your belt, you'll get a good feel for how much time you need to reserve at the end to paint your pieces. Most of your finishing time will be spent waiting for paint to dry and it pays off to be patient.

## Sanding

Make sure that your pieces, especially props that are supposed to be nice and smooth, are sanded thoroughly before painting. This is absolutely key to getting a finished product that turns heads. This is where having several grits of sanding paper and a nice sanding sponge will pay off big time. Start with a low grit and work your way up on every surface that needs paint.

## Priming

Primer spray paint gives you a nice, solid base to work from. It is designed to bond to your building material and accept whatever paint you put on top of it. I prefer to hang pieces from a PVC pipe rack that I built with some wire. A couple of good, even coats is your goal with the primer.

Let it dry overnight. It's cool, your pieces aren't going anywhere.

## Base Coat

If any of your parts need to look like metal, I an easy way to start your base color is with a spray can of metallic paint. Then you want to color your parts going from the lightest to darkest colors. If you need to do any sort of masking, be sure to wait until the paint layer below has dried completely before mashing tape on top of it. Use the time estimate on the rattle can to judge when it's ready for masking.

## Clear Coat

When all of your base colors have been sprayed and dried, you want seal them all in with a good couple of layers of clear spray paint. You can get clear paint in a variety of shininess levels. I prefer to use a flat clear paint for most of the props that I make. Believe it or not, metal gun parts look really good with a flat clear coat over them!

## Weathering

I am of the opinion that really amazing props and costumes look less realistic the cleaner they are. Making your pieces look like they've been well used in the real world is the very best way to separate your work from the crowd.

## Clean & Lame



## Dirty & Awesome



I could write another whole book on weathering techniques, but I'm going to boil it down to the essentials for you: dirt/grime and wear/tear.

Making your shiny new prop look dirty is pretty easy, but can be rather time consuming. The more time you put into it, the happier you will be with the outcome. The basic concept is to slather the gun with acrylic paint with a brush. Black is a good color to start with, but if you want to go bonkers, mix in some browns, reds, blues, and yellows. Before the acrylic paint dries, rub most of it off with a paper towel. You want to leave some behind in the cracks and corners of the prop. Think of it like you just dropped your sidearm in the mud and are giving it a good, once-over cleaning with a rag before returning to the battle! Once you think the piece is dirty enough, hit it with a couple of coats of clear spray paint to seal it in. In fact, if you do more than one layer of acrylic weathering, lay down a clear coat between your layers to prevent new layers from lifting the previous ones.

Lastly, if your prop or costume is supposed to be made of metal, nothing makes it really pop than to weather the edges as if the paint has worn through to the metal. For this task, my go-to paint is Rub 'n Buff silver leaf paint. A very little goes a long way with this stuff, so take it easy and do some practice strokes on a scrap piece. I like to use both a small brush for detailed scratches and a paper towel or Q-Tip for more broad, rubbed off looking parts. The idea here is to touch up the edges on your piece that would get a lot of wear and tear during it's active, wartime lifestyle. Think of anywhere that would be gripped often or slid against a scabbard or holster. This is where practicing on a toy gun re-paint job will pay off when you're painting your from-scratch prop.

Clear coat all of the props and, for crying out loud, let them DRY! If I can pull it off, I prefer to have everything sealed up and done a couple of days before taking them out into public. This way the finish is nice and cured and you don't smell like the paint section at a hardware store for the whole weekend!

Congratulations! You've finished! Give yourself a giant pat on the back, because you are AWESOME!

## SHOW OFF

Now I know that not everybody gets into costuming and prop making for the same reasons, but I do know that if you're proud of what you made (and you should be, you rockstar) then you probably want to show other people the piece of epicness that you forged! The best and most satisfying way to do this is to take your costume and props to a convention. Dragon\*Con, PAX, and ComicCon are just a handful of the cons in the US at your disposal! Suit up, strap on your weapons, and head into the fray! Trust me, you are going to blow minds with your amazing creations!

You don't have any cons near you? Well that's what the internet is for. Take lots of photos of your work to share with others! You can impart upon them the knowledge that you now acquire! Talking shop with other crafters online is an absolute blast!

One last note about photos. Use a lot of light when shooting photos of your work. Like, way more light than you think you need. Shoot outside in the sun if you can. Your pieces are going to look awesome and you don't want to ruin the epicness by taking photos in a dark closet!

There you go. You've got everything you need to blow minds with your prop and costume work. Go out there and build something!

# REFERENCE MATERIAL

More up to date prop and costumeing making tutorials, books, and free instructional videos can be found on our website at [PunishedProps.com](http://PunishedProps.com)!

Did I pull all of this information out of my backside? Heck no! I've spent years accumulating everything I know from a variety of sources! Here are a few of said sources.

## Costume and Prop Making Information

- [The Replica Prop Forum](#)
- [Cosplay.com](#)
- [The Superhero Costuming Forum](#)
- [The 501st Star Wars Costuming Group](#)
- [405th Halo Costuming Group](#)

## Other Maker Resources

- [Volpin Props](#)
- [WM Armory](#)
- [Kamui Cosplay](#)
- [Tested](#)
- [Evil Ted](#)
- [Sorenzo Props](#)
- [Blind Squirrel](#)
- [Keabtium](#)
- [Fev Studios](#)
- [Shapeways](#)
- [Smooth-On](#)
- [Tap Plastics](#)

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