

Seasons of Shadows

<http://www.seasonofshadows.com/hdgb/heavy-duty-ground-breaker.htm>

Heavy Duty Halloween Groundbreaker

Tools & Materials for This Project

All of the materials used on this prop can be found at home improvement stores and a few of them can probably be found in your garage.

- 2 X 4 or similar type lumber for constructing the spine
- Sturdy lumber used for the base- about 14 inches wide, 12 inches long and an inch or so thick
- Some form of tubing used for the ribs - like flexible PVC (I use the 1/2 inch diameter type used for irrigation/drip systems)
- A piece of 1 inch (diameter) rigid PVC - 10.5 to 12 inches in length - used for the corpse's neck
- Dry Wall Screws 1.5 to 2 inches in length
- Extra strength glue - such as Gorilla Glue, Liquid Nails, etc.
- Skull, arm, shoulder blade & hand bones - I purchased mine from [Anatomical Chart Company](#)
- Several feet of thin wire - I use 6 inch Bar Ties (used to hold pieces of rebar steel together)
- Needle nosed pliers, drill, phillips bit and at least three drill bits that measure 1/8 of an inch, 3/32 of an inch, and 1 inch
- Miter Saw or a Skill (Circular) Saw - even a hand saw will work
- Small Hack Saw
- Elmer's Glue and one or two rolls of smooth textured paper towels for adding skin to the corpse during the papier mache process
- Your favorite ghoulish color(s) of acrylic latex paint

Optional: Electric hand sander, router, Minwax Gel Stain, a hot glue gun, glue sticks and a can of Great Stuff insulating foam sealant. For the gel stain, I like the Antique Maple 603 color. It provides just enough color to look worn without over darkening the bones. This gives your corpse that fresh from the grave look!

Obtained from
Omarshantedtrail.com

Cutting & Securing the Base & Spine



When determining the length of your spine you may want to take into consideration how much of your corpse will appear to be sticking out of the ground.

This is really a personal preference. On this particular prop the lumber being used for the spine is 18 inches

After cutting the spine to length, I then use a Miter Saw for cutting a 33 degree angle on one end. You can also use a Skill Saw or even a hand saw if you aren't too concerned with how rough the angle of your cut comes out. If you prefer, you can leave the spine squared off without cutting any angle at all. For this particular corpse, I wanted him to appear to be leaning backwards as he breaks through the cool October earth. This angle helps to impart the image of him writhing around to break free!

I then use lumber that is an inch to two inches in thickness for the base. This ensures a sturdy place to ground our corpse. As you'll see, I tend to "bulk up" my framework more than may be necessary for your particular project. I do this for two reasons: to ensure the prop will last for many, many years and with all the additional materials ie. skull, tubing, arms, shoulder blades & hands being attached to the body, I want to make sure it doesn't tip over unexpectedly.

I cut the base about 12 inches long and 14 inches wide. After cutting my base to size, I then router the edges and sand the spine and base to a smooth finish. I include detail work like sanding and routing on my props, but it's certainly not necessary on your own personal prop building. I then place an ample amount of Gorilla Glue to the underside of the angled portion of my corpse's spine. I center the spine over the base, pressing firmly and while applying pressure I grab three, 2 inch dry wall screws (you'll find you need three hands to accomplish this one). I then drive them into the front and sides of the lumber being used for the spine, securing them to the base. Next, I do more detailing by making sure my screws are sunk in deep enough to allow a wood glue/putty finish to be applied over them. After allowing the putty/glue mixture to dry, the entire surface is sanded again to ensure a smooth finish with no screws showing.

Creating & Attaching the Corpse's Sternum/Breastbone



With the spine attached to the base we are now ready to create the corpse's sternum/breast bone using the 1/2 inch drip system/irrigation tubing. The image shows what a roll of this extremely sturdy, yet flexible tubing looks like. I cut a 15 inch piece of 1/2 inch flexible pvc with my hack saw. This next part takes a little patience- I spend several minutes shaping my pvc tubing into a design that looks somewhere

between a half moon shape and the letter U.



While the pvc tubing for drip systems is flexible, it does take some gentle encouragement to achieve certain bends. If you force the plastic into a tight curve before it's ready, then you will begin to get crimps or "pinches" in your pipe. Not that this is a bad thing. In fact this material is so sturdy it doesn't hurt it at all, however my reason for keeping everything crimp-free (as much as possible) is purely for aesthetics as

opposed to functional issues. When the skin is added to the corpse though it becomes pretty much impossible to see the crimps.



In this image you can see a close up of the bottom of the sternum attached to the 2 X 4 spine (the spine is laying flat against my work table). The empty space between the top and bottom of the sternum attachment is about 9 to 10.5 inches. After measuring out and marking my points of attachment I add some Gorilla Glue to both ends and then drive my two inch drywall screws through the tubing, into the spine.



I usually use one or two screws per end to guarantee a tight connection between the tubing and the spine. Be careful not to overtighten your screws as they can chew a larger hole in the tubing than is needed. This can also be remedied by using washers with your screws to prevent the heads from chewing up the tubing. We are now ready to give this guy some ribs.

- **Subscribe**

Heavy Duty Halloween Groundbreaker Page 2

Attaching Ribs to the Spine & Sternum



Note: You'll notice a difference between the texture and finish of the wood used in many of the images throughout the remainder of this project. I was building two of these identical props at once, and was not performing the exact same detail work (sanding and routing) on both projects.

It's time to cut more plastic tubing to create the ribs. I made this prop with four sets of ribs on either side of the sternum, plus two pieces of tubing for the collar bones/clavicles (which we'll add later after connecting the shoulder blades and arms). I usually pyramid or reverse taper them- starting in tighter and shorter at the top- then widening out and arcing up the further you go down the body. This reverse taper resembles the human anatomy. Of course you can always alter the anatomy in whatever creative way seems fitting. Remember, these guys have been buried for years- so who knows what kind of twisted wrecks they will appear as when it comes time to break out!

Here are my measurements for this prop's ribs (per individual rib per side). They appear to be in good proportion to the skull and arms that I purchased from Anatomical Chart Company:

- Top Rib= 12.5 inches
- Second Rib= 14.25 inches
- Third Rib= 15.75 inches
- Fourth Rib= 16 inches
-



After cutting and shaping the tubing into positions that resemble ribs, I drill holes into the ends (on the inside of the tubing- about a half inch from the edge) that I plan to attach to the sternum. I use a 3/32 of an inch drill bit for creating these holes, but you can use a bit that's smaller or larger depending on what you have access to. I wouldn't go any larger than about a 3/16 of an inch bit though, as it will start to create holes

that may be too large for securing the ribs without allowing too much play.



I also drill holes into the sternum using the 3/32 of an inch bit in the positions where the ribs will join up with it. This can be done in a number of ways, but basically I drill through the side of the sternum tubing at an angle that will produce an exit hole toward the floor. I do this on either side of the sternum. So, the sternum (at this point in our project) has 4 holes in it- two on either side per corresponding rib for our set of

the first two ribs.

I drill the holes in the sternum and ribs in this manner to be able to conceal the wire I will be using to attach the ribs and sternum together. This first set of holes are drilled about two inches down the tubing from the point where the sternum and spine attach. This is all personal preference though. You can space your ribs at whatever intervals you choose. I stuck with a 1.5 to 2 inch spacing between the remainder of the ribs all the way down the sternum. You may want to start your ribs higher up on the sternum than the two inch measurement I used. This will prevent you from having to add collar bones/clavicles later on to fill in the space.



Now I don't attach the ribs to the sternum yet. I attach to the back of the spine first. It's just easier to pre-drill the holes, in the previous step, prior to attaching the tubing to the sternum. In this step, I attach the ribs to the back of the 2 X 4 spine with my 2 inch drywall screws and using more Gorilla Glue, as seen in the corresponding image. You can attach one rib at a time to the spine and then attach that rib to the

sternum or you can attach both to the spine and then to the sternum- it really doesn't make a difference.



After securing both of the ribs to the spine, I then check the flexibility of my tubing with a few more bends. After making sure it's ready to be bent towards the sternum (again trying to prevent as many crimps as possible) I cut my wire to length. I use bar tie wire with the ends/loops straightened out or snipped off depending on the length I need. I then run it through the holes I drilled in the sternum and rib, bringing it

out into a U shape.

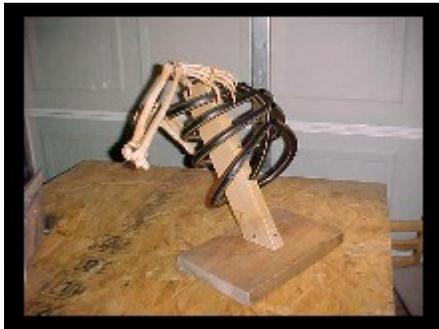


Each rib has its own individual U shaped wire to attach it to the sternum. I use gloves to start twisting the wire, then I bring out the handy needle nosed pliers to finish the job. I twist until the majority of slack is out of the wire and the rib is making a tight bond with the sternum. Once this is accomplished you may have to trim or twist off the remaining slack of the wire. You will be left with a tight, compact piece of bar

tie wire that can be concealed by pushing it up against the inside of the ribcage. After attaching your first set of ribs, you'll notice that they are very tight against the sternum, yet they may not be quite flush with it- we'll fix that shortly. After finishing this first set you can go ahead and continue the same process all the way down the sternum. Spacing and rib length is up to you, but again if you want to follow my measurements (mentioned in the above steps) then give it a shot- they do seem to work fairly well with the dimensions of the standard 4th quality bucky body parts.

Heavy Duty Halloween Groundbreaker Page 3

Attaching Bucky Shoulder Blades/Arms to the Ribcage



After attaching the remainder of your ribs in the same fashion as the first set, your corpse should look a lot like this image, minus the bucky arm attachment. We now have built a solid form that can handle bucky body parts, including skulls, arms and legs. For this prop, I didn't attach any legs, but on future projects I plan to use this same frame construction to attach a femur (bent at the knee) to create the appearance of

a leg making its way out of the ground too.



Now, to prepare the shoulder blades and arms for attachment to the body, we need to dismantle the bucky hardware from the shoulder sockets. Once this hardware has been taken out, you can stain the bones (if you choose) with your favorite color of MinWax Gel Stain. Be sure to have plenty of ventilation or fans running when using the stain. I use a foam brush to paint the bones with the gel and after

waiting several minutes, I wipe clean with a rag. I'll cover more on applying the gel stain coming up, in my steps on preparing the bucky skull for attachment.



Once you have taken your shoulder joint apart, you are ready to drill holes into the shoulder blade itself. It's through these holes that you will place more bar tie wire, in order to attach the shoulder/arm combo to the back portion of the ribcage. In this image, I've used my 1/8 of an inch drill bit to drill two holes, about a half inch apart from one another and 1/4 to 1/3 of the way down, from the top of the shoulder blade.



It's not imperative that these holes are in any specific position or distance from one another. They just need to be able to make contact with the upper rib. In this image, I drilled another hole (using the same size bit) a few inches away from the first two, close to the outside edge of each particular shoulder blade. In other words- to the far left edge of the left shoulder blade and to the far right edge of the right shoulder

blade. This third hole will serve as our means for permanently positioning and connecting the arm to the shoulder blade and body.



After drilling your three holes, you are ready to position the shoulder blade against the back of the upper ribs. I hold the shoulder blade with one hand against the tubing and using my existing holes (the two that are nearest one another) as guides- I drill into the tubing. You can then insert another bar tie wire (with ends snipped off) to twist, locking the upper portion of the shoulder blade into position as seen in

the image.



Prior to twisting your bar tie wire tight you may want to add a little Gorilla Glue at the contact site of the shoulder blade and tubing. It's not necessary, but provides added strength. Next you need to determine what position you want for the arm. It's important to hold it up for a "dry run" and get an idea of the rotation and angle in which you want it to intersect with the shoulder joint. This dry run will determine

where the hole will be drilled, in the upper arm, for inserting your connecting bar tie wire.

Play with it and see what looks best. Then you will have an idea of where to drill. Again you want to use your 1/8 of an inch bit to create the hole. After drilling, just run your bar tie wire through the arm.



You can now run your wire off the arm into the third hole that was drilled near the outer edge of the shoulder blade. Feed the slack through the hole and twist your ends together on the backside of the shoulder blade. You may want to leave the arm loosely attached for now until you determine where you prefer the position of the elbow joint and hands (we'll do this next). You'll notice that the arm in the picture is hanging loosely until it's time to permanently secure it. Next you can drill the two bottom holes on the shoulder blade (seen in the image) to attach it to the second set of ribs. Since the shoulder blade is already secured in the top connection, this set of holes is easy to drill into the bone and right on through the tubing. After drilling through, secure with another bar tie wire and Gorilla Glue.

At this point you may be wondering why we took the original Bucky hardware out of the shoulder socket to begin with? I find that the original hardware is far too bulky to papier mache over when adding skin to the corpse. The original hardware also doesn't provide the rigid stability to permanently hold the arm in place when compared to using bar tie wire and good 'ol Gorilla Glue (which we'll be using in the shoulder socket shortly).

Heavy Duty Halloween Groundbreaker Page 4

Posing the Elbow Joint and Hand



This step can be done prior to loosely securing the arm to the scapula, however if you've left enough slack in your arm's bar tie wire then there should be no problem in doing this step after **loosely** attaching the arm. In this image, I have again used my 1/8 of an inch drill bit to drill a hole near the inside of the elbow. The placement of the hole is not critical, it just needs to be located where your wire can reach through and attach to the bucky elbow joint hardware.



I then insert my wire through the hole and loop it around the joint hardware. In the bottom image the elbow is bent and you are now looking at bucky's funnybone. I inserted the wire so that it met in a way to be tied off at the back of the elbow joint. You will need to determine how much of a bend you want in the elbow before overtightening the wire. On my prop I decided to have a significant bend with the arms

rotated out, but you may prefer a different pose. Once the slack is cut or twisted off, with your pliers, you can push the remaining wire into that nice little recess under the elbow, seen in the image.

After achieving the desired position and securing the wire, you are probably going to want to add some Gorilla Glue to the joint to ensure it maintains its position. The wire will do a great job in holding the position, but Gorilla Glue will guarantee it stays there for good. I love Gorilla Glue and its amazing bond after it dries, but when wet - it doesn't resist gravity too well. If you try to apply a generous amount, on the elbow joint, it will have a tendency to run off before any of it actually has a chance to dry.

A fix for this is to use your hot glue gun. I like to create a hot glue lining around 1/2 to 3/4's of the joint (primarily on the bottom and sides of the joint) prior to using the Gorilla Glue. This lining dries fast and creates a barrier that keeps the Gorilla Glue right where you want it. If it sounds confusing just try it, you'll get the hang of it as you go along. This bar tie/hot glue/Gorilla Glue combo is the best technique I've thought of for permanently positioning bucky arms and legs without having lots of wire or rods to cover up, or worse- having them exposed and in plain sight on Halloween night.



We are now ready to apply the same technique on the hand and wrist, that we used on the elbow. For this step, there is no need to drill any holes- we just take advantage of the type of hardware that is used to secure the bucky wrist. The bar tie wire is slipped under the hardware that comes into contact with the radius (the bone that falls directly under the thumb joint) as seen in the image on the left.



It's then threaded in-between the bones in the middle of the hand. If you pull these little bones apart you will find wires holding the hand together. Find the most prominent place to thread it through, based upon how you want your hand positioned. We then bring the end of the bar tie wire into the palm of the hand. At this

point you will again twist your bar tie ends together until they are extremely tight and then clip or twist off the remaining slack.



The remaining wire can be tucked into the palm (as seen in the image) of the hand and will be covered when we apply the papier mache to the corpse. When you are satisfied with the position of your hand, you will again need to create a lining around the wrist with hot glue. After your hot glue dries, you can apply Gorilla Glue to permanently secure the wrist.

Securing the Arm to the Shoulder Socket



This brings us back to working again with the shoulder joint. We are now ready to take the remaining slack out of the bar tie wire (by twisting it taught) that was used to loosely secure the arm to the shoulder socket. As you are twisting the wire tight, be aware of the positioning of the arm, making sure it's posed in the manner you are intending. Once the wire is tight, you may notice there is still quite a bit of play in the arm - due to its sheer weight. The trusty glue gun and Gorilla Glue will take of that. I usually support the elbow (making certain it doesn't move around) with a very tall container of Elmer's Glue or whatever is handy. I then begin using the hot glue technique that we used on the elbow and wrist, for creating a lining around the shoulder/arm socket. After the hot glue dries, you are ready to use the Gorilla Glue.

Once you finish applying the Gorilla Glue it's a good idea to leave the arm (with elbow still resting on a container of some sort) or arms, if you worked on both simultaneously, to dry overnight. This really isn't an issue with the elbow or wrist because of the size and weight distribution, but with the arm you have to allow the glue to dry fully prior to removing it from the support that's placed at the elbow. After the glue has had several hours to dry, the prop can easily be picked up and carried around by the arms without even flinching. If for some reason you still find that your arms aren't as stable as you would like- no worries- when you apply the papier mache process it will create a tight bond against the joint that will reinforce it.



One last minor detail and we are ready to move on - when you use the bucky shoulder blade and arm combo, you will notice the collar bone or clavicle that comes dangling with them on a little wire (you can see it hanging down in this image from the previous page). After securing both of your arms and shoulders to the body, you can check and see if the clavicles that came attached to the parts will reach the

sternum. If they reach - that's great. You can secure them to the sternum by using some of the same methods we've already used for attaching the ribs and other parts. However, if they don't reach (like mine)- just snip the wires and set the little bones aside. They may come in handy for another project, but won't work for the clavicles on this prop. We'll cover an option for adding clavicles after attaching the head.

Heavy Duty Halloween Groundbreaker Page 5

Attaching the Head



Once you have finished the steps on the previous page for both arms, your corpse should look similar to the following two images, minus the clavicles and head - which we are now ready to attach. You'll also notice some "filler" placed between the meeting point of the ribs (on the sternum) in these images. That's done using Great Stuff to fill in the gaps that are created when tightening the ribs against the torso. I'll

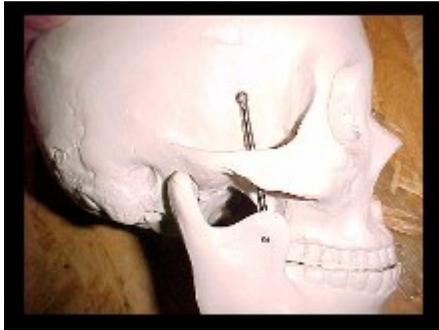
also cover the use of Great Stuff after we finish attaching the head.



Prior to attaching the skull, you may want to add some Minwax gel stain to get rid of that fresh from the factory bucky shine. If you plan on covering the entire head in papier mache then this step is not necessary, but when I add skin to this prop I want to leave some hanging off the face. This will expose the bone, so I want it to be nice and dirty looking! Some bucky body parts absorb the gel stain better than others. For this

prop I purchased the one piece, 4th quality skull. I noticed that the gel stain didn't want to seep in as easy as it has on other 4th quality bucky parts. In this event you have to

apply more coats to achieve the desired color. I used flash in these images so it's hard to tell what the stain looks like.



I took out the hardware on both sides of my skull - screws and springs. If you plan on leaving the jaw closed, you would probably be ok leaving everything intact, but I love to create agonizing looks on my props. I find agony is more easily accomplished when the jaw is opened nice and wide. So the spring had to go. Once the hardware has been removed, we are ready to slather the skull with gel stain. Again, do not forget to ventilate your work area when working with this stain.



I applied mine in the garage, with the door closed, but used a strong fan to clear the air. The smell is pretty potent. I believe the skull took about three to four applications to achieve the color I wanted. I may just purchase a darker color than the Antique Maple 603 for my next project, so it won't require as many coats. I typically left each coat on for about ten minutes and wiped with a rag between each application.



Next, I turn the skull over after it dries. And, using my 1 inch drill bit, I create a hole in its underside. If you use the bucky 4th quality, one piece skull - there is already a perfect outline and the start of a small hole to guide you in the placement of your bit. The reason I chose a 1 inch drill bit is due to the fact I'm using about a 1 inch (diameter) piece of rigid PVC for the neck. This creates a great snug fit. Use whatever drill

bit matches the diameter of the material you are using for your neck.



I then cut my PVC neck at a length of 10.5 inches. Again this is a matter of personal preference. I decided to submerge 1 and 1/4 inches of the neck (on the next step) into the spine itself, to ensure a solid attachment. The majority of the neck is going to be concealed inside the bucky skull as well. After cutting the neck to length, I placed a generous amount of Gorilla Glue on the rim of the pipe to be inserted into

the bottom of the skull. I pushed the pipe in until contact was made with the inside of the skull cap. After that, I sank three 2 inch drywall screws, at an angle, through the skull and into the PVC. Like I said- these guys are built to last!



It was then time to take the 1 inch drill bit and drill the hole into the spine (as seen in the image), where the neck would be submerged. I continued drilling and stopping, double checking my measurements until I was about 1 and 1/4 inches into the spine. After preparing the neck's "final resting place" - sorry I couldn't resist the pun - I poured a decent amount of Gorilla Glue into the bottom of the hole and then

positioned the neck at the angle and direction I wanted the head facing.



Next, I sunk three screws into the spine and through the PVC- careful not to drive them in in a position that would cause a major splitting of the lumber. You'll notice in the image that the clavicles (made from tubing) have been attached. I forgot to grab a picture of the prop, with the head attached, prior to the clavicles being added- that's ok though, because we are getting ready to attach the clavicles in the next step.

Heavy Duty Halloween Groundbreaker Page 6

Attaching the Clavicles



I really consider this step optional. It all depends upon how high up (on the sternum) you started your first set of ribs. If you began extremely high, then you may need to add an additional lower set of ribs, instead of collar bones/clavicles, to balance out the look of the body. I decided to add a set of clavicles to this prop because the space between the set of top ribs and the shoulder blade looked to be a little too wide and open.

The clavicles will be the only set of tubing that do not attach to the spine. Instead, they attach directly to the shoulder blade and the sternum. I did not include images of the actual attachment to the sternum because the process is identical to how we attached the ribs. Make sure and take a good measurement between the high boney protrusion of the shoulder blade, that each clavicle will butt up against (seen in the image) and the place you decide to attach them on the sternum. Since the clavicles are attached in

such a high position, they do not need the amount of shaping that the ribs require. You can then drill a hole through the shoulder blade (about where the clavicle makes contact) and attach with bar tie wire. Repeat this step for both clavicles and you are ready to move on to filling in the gaps between the meeting point for each rib.

Filling in the Ribs



This is another step that is either optional or can be done with mache when you are ready to papier mache the corpse. I prefer to use a product called Great Stuff, prior to the mache, to fill in the spaces. You just attach your little plastic hose to the Great Stuff product and gently apply pressure while aiming the nozzle towards the opening of the tubing, where each rib comes in contact with the sternum. Great

Stuff has a tendency to ooze out pretty fast and will keep coming after the pressure has been released. In the image, you can see that I started out only applying the product to the inside portion of the tubing where it contacted the sternum, but as I continued down the body I found it worked best to build up the sternum connection, between each set of ribs as well. Great Stuff expands as it dries, so what looks perfect when wet may become a little too bulky a few hours later. This happened to me, but Great Stuff is sandable when dry, so I was able to fix anything that over expanded.

This brings us to one last optional portion of this project before we finish. I also like to use Great Stuff to build up the neck of the corpse. This too can be done with mache during the papier mache process if you like. Or if you just like having a very skinny neck on your corpse then there's no need to build up any bulk to this section of the body. Use the Great Stuff to slowly build layers of bulk for the neck. Be sure to wear gloves and you can work the product into the desired positions with your fingertips. After the neck has been built up, dried and sanded, you can then attach your jaw using the hot glue/Gorilla Glue techniques we used in previous steps. Bucky jaws are so lightweight that glue should do the trick for you- of course I also like to add a small screw in either side to ensure it holds, but that's just me.

And that's how I construct my heavy duty groundbreaker frame. I haven't had an opportunity to design the how-to for adding texture and color to the prop. But, I do have some quick tips below for anyone who is ready to mache and paint. There are also several segments in my [Haunter's Reality Videos](#), featuring mache techniques, that provide some how-to help.

Adding Skin and Color

- Stuff newspaper into your ribcage- this allows your papier mache to have a surface to stick to as you cover the ribs.
- Use paper towels with a smooth surface design- this prevents any fancy texture from showing up on your prop after the mache dries. A corpse with a fancy doily print on its body may kill the effect you're going for on Halloween night.
- I use a 3 to 2 ratio of Elmer's glue and water. You may want your mix a little thinner or thicker, just experiment and see what you prefer.
- Find old food containers (with a wide opening) to dunk your paper towels into the water/glue mixture. I use old cottage cheese and butter containers.
- Use thinner strips of mache for the majority of the corpse- it may take longer but looks better than slapping bulky pieces on the body.
- Experiment with bunching the paper towels up and really causing them to wrinkle - helps create a nice aged effect.
- Allow the entire prop to dry for a few days prior to painting it.
- Use at least two coats of spray paint to "prime" the corpse. Use a spray paint that is close in color to the first major coat of paint you will use on the prop. Using spray paint will help fill in the nooks and crannies that may be missed when you start applying your first coat using a brush.
- Experiment with different types of paint and painting styles. I use interior and exterior types of acrylic latex. I apply a lighter color for the basecoat and then experiment with dry brush techniques, using darker colors to create lowlights.
- If you don't seal your props with something to prevent rain damage- be prepared to drag them in on stormy nights. The advantage to building a heavy duty groundbreaker is that your prop won't lose shape - even if it gets wet, but the skin may have a few issues if you do not seal it from the elements. I've purchased a new sealant product called [Sculpt or Coat](#). Many thanks go out to a talented guy who goes by the name "krough" (not sure what his real name is) over at [grimvisions.com](#) for introducing me to this product. Once I finally use it, I'll let you know how it stands up to my moisture and heat tests.

Thanks for taking the time to read the how-to for my heavy duty groundbreaker. If you try making one of these props then please let me know how it turns out.

Obtained from
Omarshantedtrail.com