

## TRAINING REMOTE

Welcome to my page on building the training remote. I originally wrote the article many years ago for MODELERS RESOURCE. Since then, many have made improvements and or found parts that eluded me at the time. Over the past few years, I have been asked to “re-print” or otherwise make available the information from the original article. I apologize that it has taken so long. I wanted to review everything, and bring it current and incorporate the information mentioned above, however, time being what it is, Im doing good just to bring you what I have, and hope it will at least get you started.

So hear ya go, I hope you find the info here helpful. If you have a question, email me and I will do my best to answer, however, please do not email me asking for kits. I do not have anymore. They are long gone.

Please keep in mind, there is some photographic distortion in the pictures. Also the painting pictures are of a previous model. [The pictures of the raw resin ball are the third, final, and most accurate attempt at reproducing this really cool prop.](#)

Also, the pictures below are out of order so to speak from the original article, so ignore the numbers on the photos themselves. Thanks!

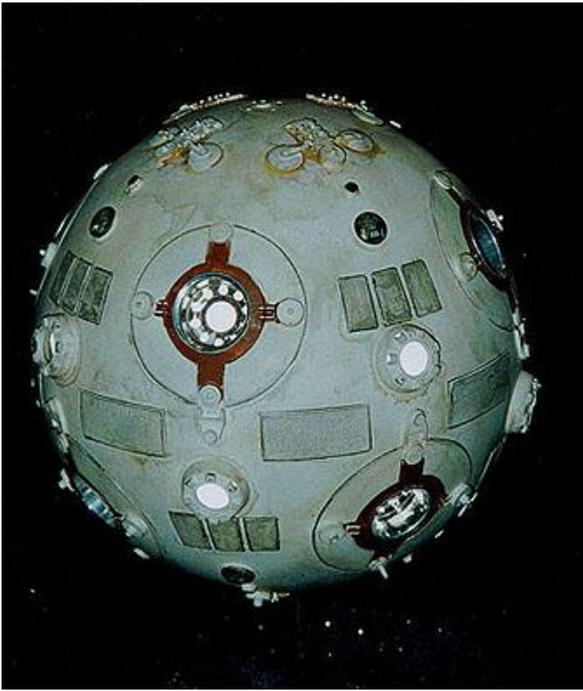
Enjoy.  
Frank

## STARWARS TRAINING REMOTE

There have been many models built based on the various spaceships seen in the film STAR WARS. One of my favorite items has always been that little ball that flies around the Millennium Falcon during Luke's initial introduction to ways of "the Force".

Now the training remote is more than just a sophisticated "Piñata" (piñata = a stuffed paper mache figure filled with candy hung from a tree, where small blindfolded children strike at with a bat). The remote is a worthy opponent and is designed to train one in the use of his light saber weapon.

Okay, enough of the STARWARS review. How do you make one? After all, there is no ERTL kit for the training remote. Until recently, few people have gotten a close enough look to figure out what was used in the construction of the [prop used in the movie.](#)

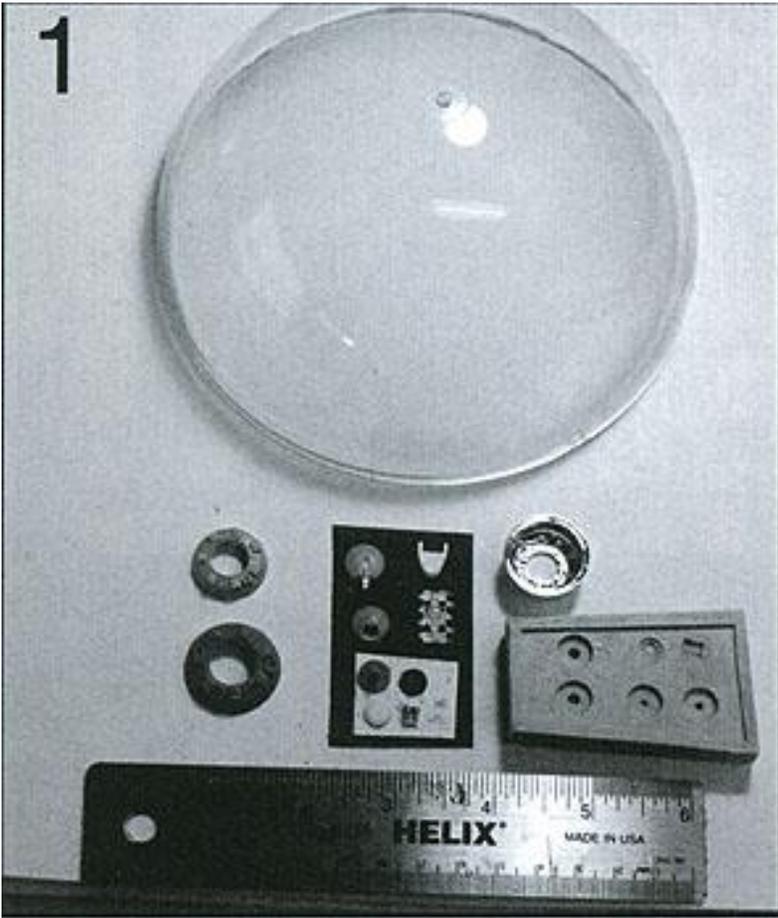


I originally built my remote based on pictures available in the "STAR WARS to INDIANA JONES ARCHIVES" book, as well as a picture or two smuggled out of "the Ranch" itself. Today you can find a great reference photo in the STAR WARS VISUAL DICTIONARY or visit the STAR WARS exhibit in Washington DC's Air and Space Museum.

For those of you who do not know, the models used in STARWARS were scratch built with a technique known as "kit bashing". Kit bashing is when a hybrid object is made by using parts and pieces from existing kits. The process is very tedious, and time consuming. In many cases, only one part may be used from a very expensive kit. Another problem for the aspiring STAR WARS model builder, is the many of the kits used in production are no longer available. Recently, many kits that that were used in 1977 have been re-issued but not always with the same tooling, so be careful.

**Assembly...Finally!!**

To build the training remote, you need; sheet styrene of various thickness, [parts from a couple of tank and truck kits](#), two six inch clear half hemispheres from PLASTRUCT ([see bwphoto 1](#))



and some SCOTCHLITE. A good knowledge on molding will also be helpful as you will need quite a few repeat parts.

Speaking of parts, what are they? Most of the pieces are tank parts. Three of the pieces are hatches and tank treads from a 1/48 Tamiya Panther "type G" tank model. The chrome truck rim is from a 1/24 Trailer model that can be found in most truck kits, you will need 8 of them. I am told there is a wrecker model that has 8 chromed rims, but I don't have the kit number. I molded Rims out of the Ertl T-600 Truck model kit. Then had the castings Chromed.

All the photos in this article of tank parts are from a 1/35 scale Panther "type G" model. The actual prop used in filming utilized 1/48 parts for the tank treads and hatches. At the time of my original build, I had no idea they used the 1/48<sup>th</sup>. Believe it or not, I have a remote done in 1/35, it actually looks decent, so if that is all you can find, so not sweat it. For all you purists out there that must use the 1/48 parts, note that the 1/48 Panther is not easy to find and the re-issue has been retooled. Remember, no matter what scale you use, the procedures described here are the same. When I decided to write this article, I had to re do some photos of a PLASTRUCT Sphere, so I bought a third one. Needless to say, I decided to build a third and more accurate training remote.

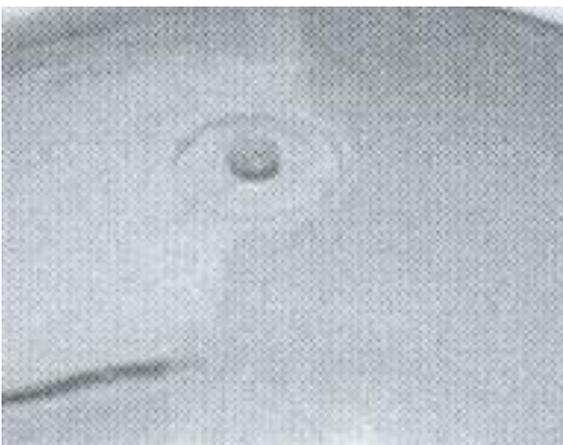
Unless you want to spend A LOT of money on 16 (at 50 bucks a pop) tank kits, you might want to invest in some RTV rubber and make molds of the hatches you will be needing. You will need 8 sets of everything. Simple dump molds are really all you need. RTV rubber can be purchased in small quantities at most hobby stores. Google your local SMOOTH ON retailer.

Most of the parts are molded easily enough by rubber cementing the bottom of a foam board box and dumping RTV rubber on them. One part needs special attention. ([The round commander's hatch is shown here on a resin casting of the completed remote](#)) looks like a funny bowl with bottom missing.



The best method is a two part mold so you keep the original 3-D shape of this part. The commander's hatch actually covers SCOTCH-LITE that has been adhered against the ball. I didn't feel like messing with a two part mold, so I filled the hatch with clay leaving the center opening recessed somewhat so the hatch didn't look like it was filled with clay. I made a one part dump mold and sanded the castings against the hemisphere to ensure a nice fit ([photo 6 above](#)) when they get glued on later. You can use a DREMEL tool and hollow out each piece so it looks like the original, or leave it solid and add the SCOTCH-LITE inside the recessed area on top of the commander's hatch. The look is the same.

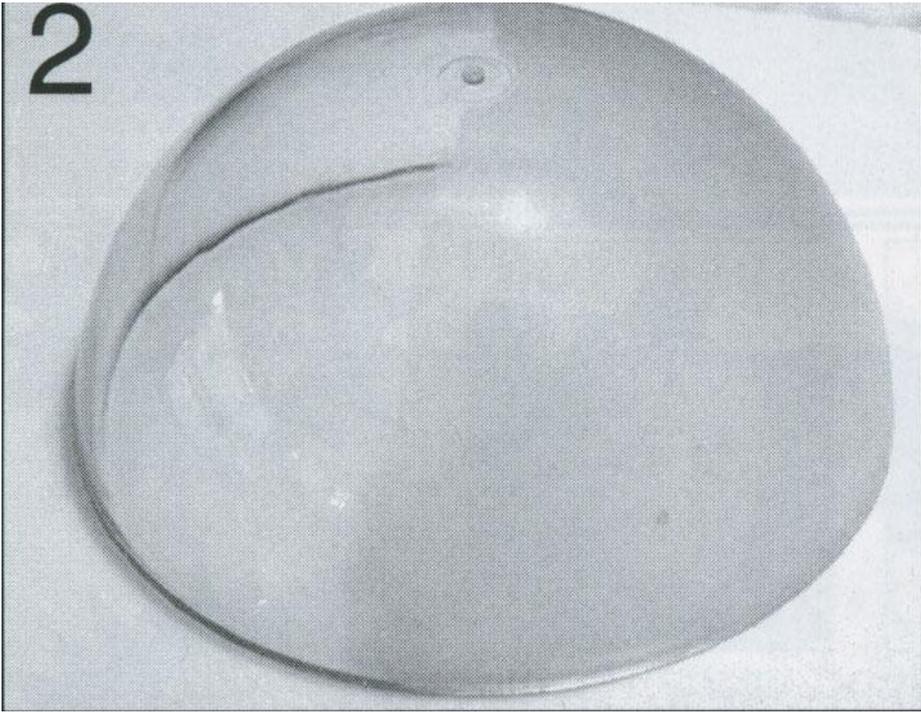
Let's get started. Look at your PLASTRUCT hemispheres. The very top there is a small post in the very center of a circular indentation.



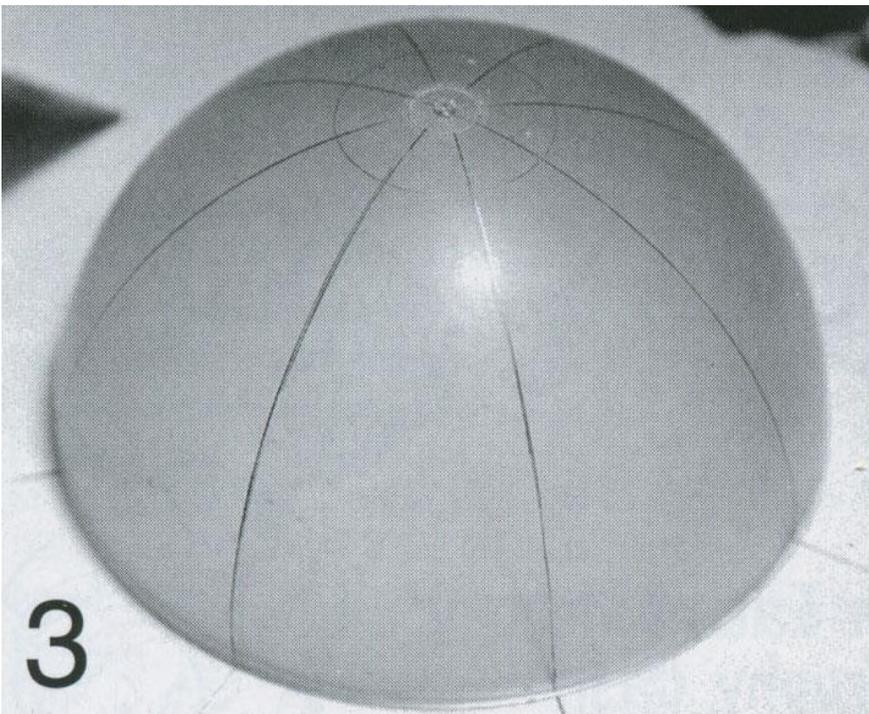
You will want to drill a hole dead center of that post in order to slide an aluminum tube through both halves when we glue the hemisphere together later. The tube will allow for a fishing line to be easily threaded through your ball. Why? You will want to hang your creation from your ceiling so you can pretend to train with your light saber when no one is looking. [There are also four tiny holes that surround that post.](#) In the picture it sort of looks like the hole is "filled in" with a plastic disc, I do not believe it is.



The PLASTRICTS Clear hemisphere is too smooth to mark on with a pencil, so rough it up with some really fine sand paper (see [B&W photo 2](#)). You don't need it to be clear as you are going to paint it anyway.

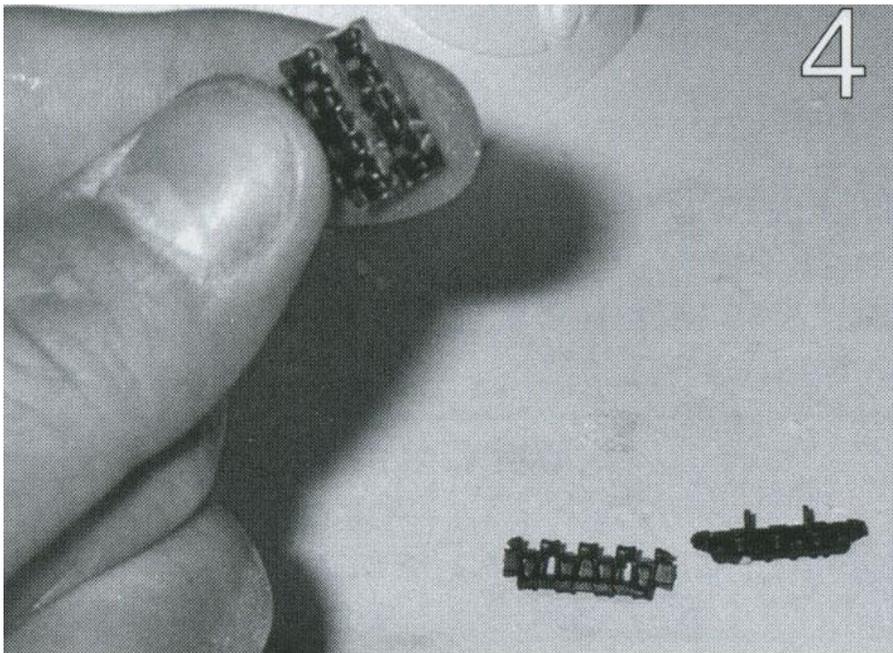


Take flat piece of poster board and using a compass, draw a six inch circle. Be exact in your measure. Now, using a protractor divide the Circle into 45 degree pie halves and extend the lines outside the circle ([see figure 1](#)).



Place the Hemisphere over the circle you have drawn and mark the 45 degree tick marks into the hemisphere. Take a STRAIGHT piece of styrene, and using it as a flexible straight edge, extend the lines onto the hemisphere toward the top (see [B& W photo 3](#) ; ). These will be your guideline for all the goodies you are going to glue to the surface. Repeat the entire process for the other hemisphere.

Start gluing the castings you have made to the hemisphere. Begin with the tank treads (see [B& W photo 4](#)).



If you use the 1/35 model you will have to glue the two tread pieces together and they will also have to be shortened. So lightly sand each edge flat. They should come out to be 16.5 mm long for the 1/35 kit which is a tiny bit longer, but that is fine. Refer to B&Wphoto four. If you are using the 1/48 kit, they are already in one piece and the proper length which is actually 15mm ([see them here on the accurate rotocast ball](#)).



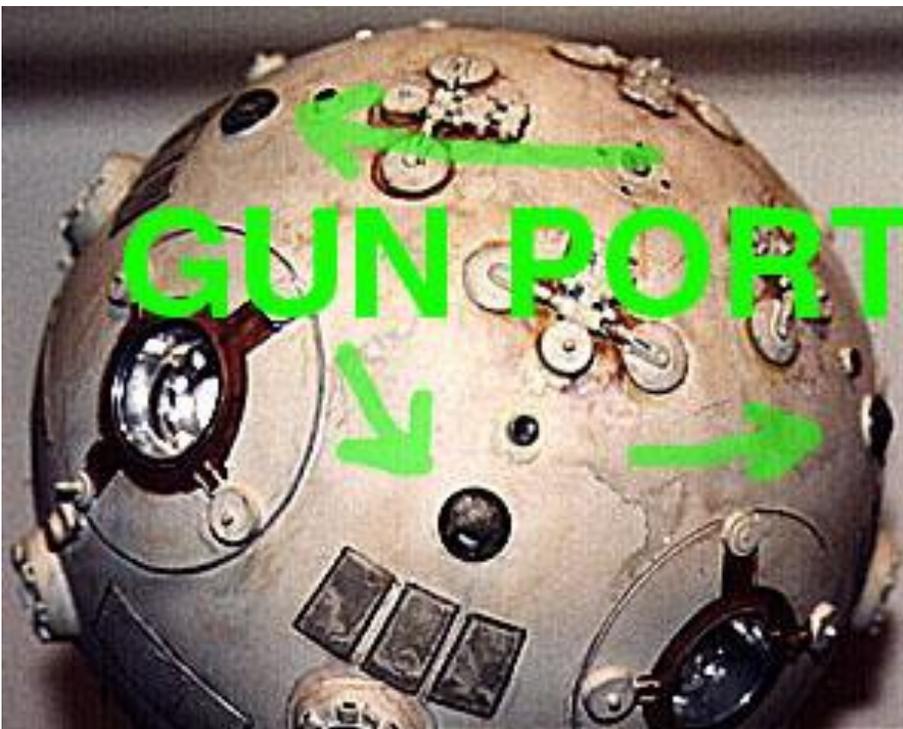
Position the tank treads 2 cm down from the very center of the "North Pole" of your hemisphere to the closest edge of the tread. Center one on four of the reference lines in a North, South, East, and West fashion.

Next, there is a cover for the commander's hatch that looks like a frying pan. [Glue two tank hatch covers](#) on each side of the bottom of the tank tread. They are angled 90 degrees out from the tread. (Note: If you wish to have symmetry, do the same for the other hemisphere. However, the actual prop used in STARWARS only has these two tank hatches on the "north" hemisphere.)

At the base of the Tank tread is a wheel with a post. Originally, I had no idea what kit they stole this part out of so I made it with sheet (.060) and rod styrene (.080). The circle is 9mm in diameter the post is 2mm in diameter and just as high. However, I believe it is from the same Sherman kit the other wheels are from, so check, or see if anything has been updated on the RPF.

There are four more items below the wheel you have just made and glued on. The [first is a small post](#). The part (#22 in this kit) actually exists in the 1/48 model, you will know it when you see it, I think its a muffler baffle. It is upside down and glued on. The part is slightly smaller on the top, think of an upside down foam cup. The part if you choose to scratch build is 4.75mm across the top maybe 5 on the bottom 3.5mm high.

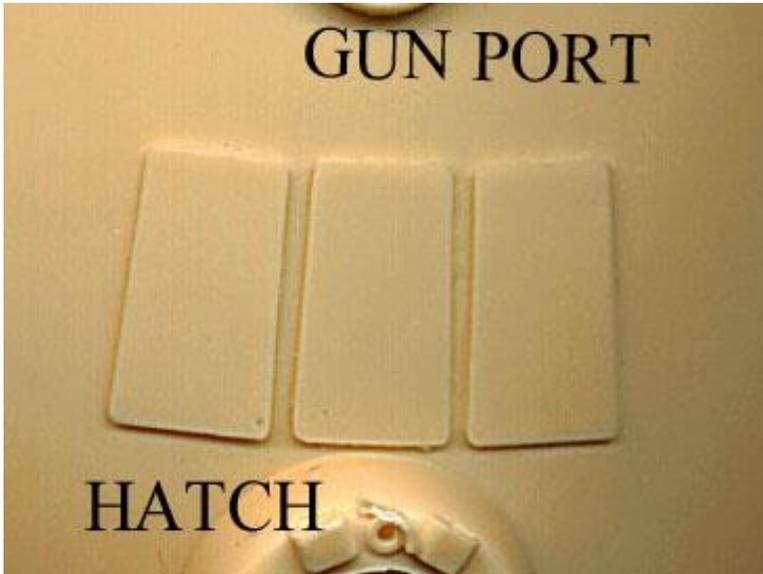
After the post there is a [gun port](#) from the Panther kit.



I used the 1/35 gun port and it made my model seem crowded. The gun port is shown in photo 5 above the three gray rectangles.

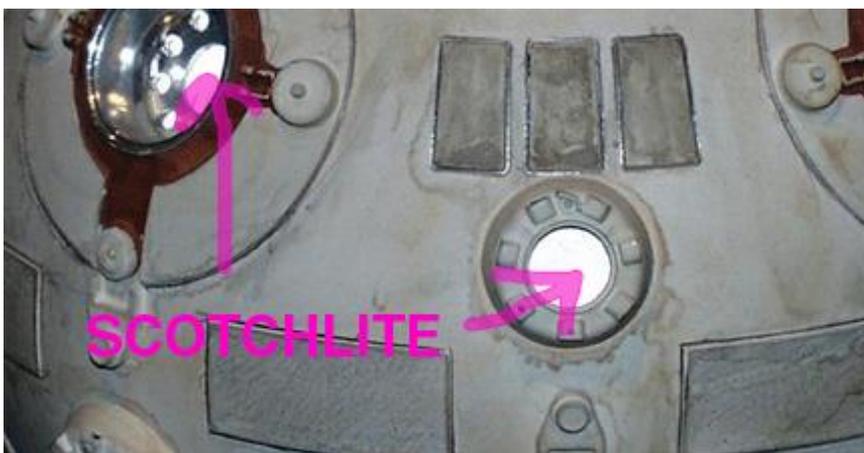
Below the gun port are three vertical rectangles. The dimensions on each are 6.4 x 14.3mm. However, the kind of look like there is a slight taper toward the top of each triangle. I had thought it was photographic distortion, However, when I saw the actual prop in

Washington DC there was indeed a taper.



The rectangles are your dispositional reference. Below the rectangles is the round commander's hatch I mentioned earlier. Notice I have not given you ANY measurements regarding spacing of the previous items. The reason: if you use the 1/48 model parts you may want to adjust the spacing. I used the 1/35 and placed the tank hatch exactly 4mm above the bottom of the hemisphere, then placed the three rectangles above the hatch. If you use the 1/48 hatch, 4mm maybe be too low. The archive book has a good side shot, take a peek and use your skilled modeling MOD-1 eyeball.

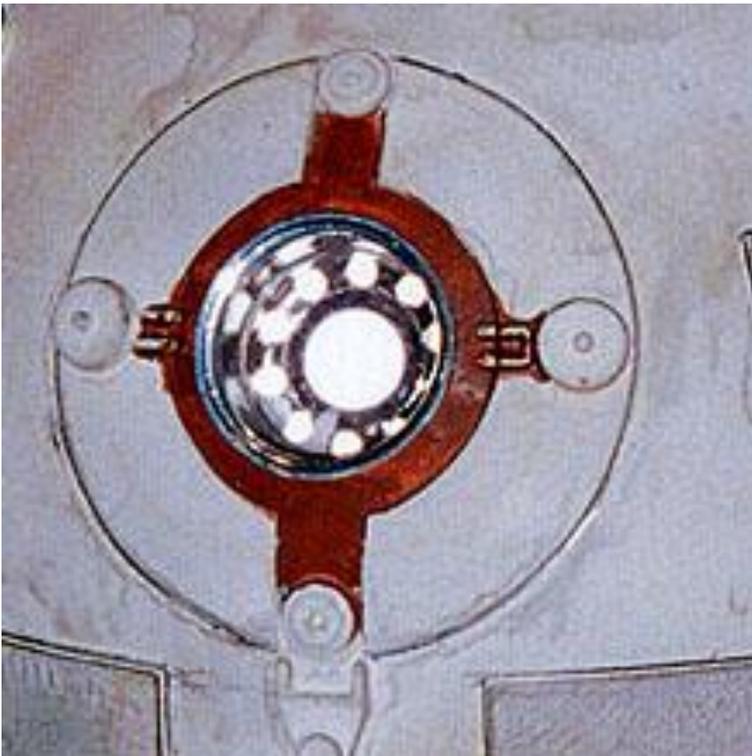
Once you have decided where to put the commander's hatch, draw a circle around it and set it down. If you hollowed out your hatch, cut a circle (1.5cm diameter) of SCOTCH-LITE and adhered it to the sphere over the same spot where your hatch will go. You should be able to see the SCOTCH-LITE through the opening in the tank hatch. If your hatch is left solid, just add the SCOTCH-LITE into the recessed area. Now glue the hatch onto the sphere.



The three rectangles go directly above the hatch you just glued to the hemisphere. The middle rectangle touches the hatch below it. Space the other two rectangles 1mm on either side of the middle one. Now, you have to space the gun port, and the post between the top of the rectangles and the wheel that is at the base of the tank tread. They should end up 7mm apart from each other, but it may vary.

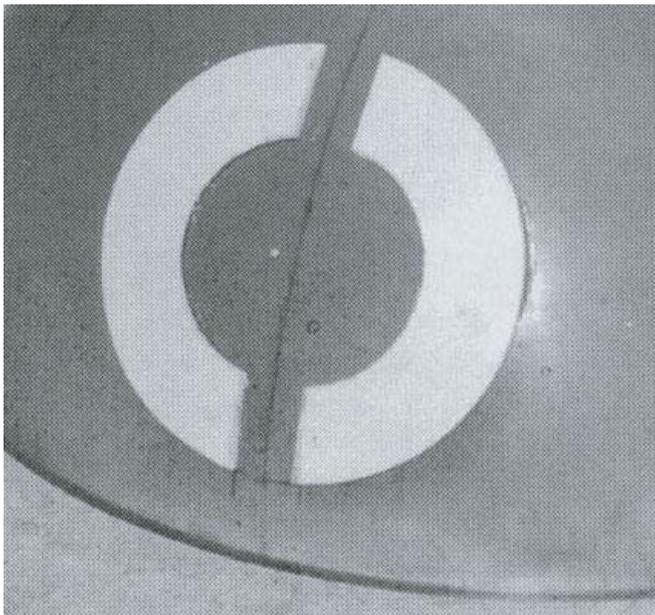
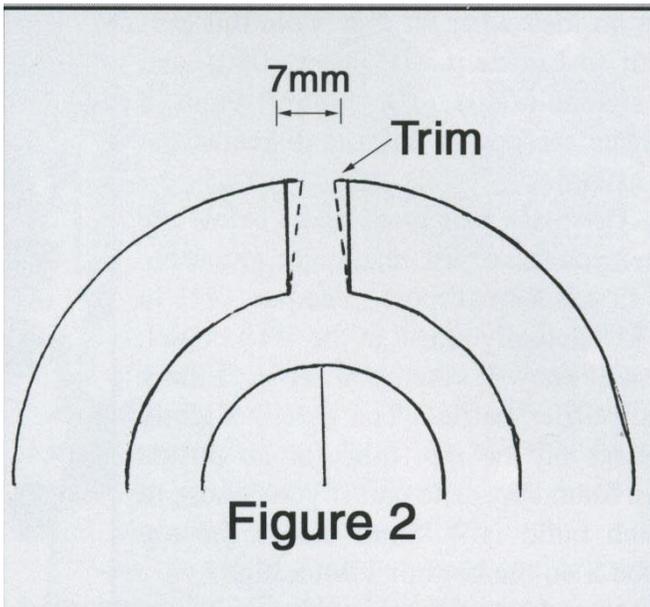
Look at them and adjust as needed. Remember, if you are using the 1/48 parts you will have even more space, that's good as the real prop looks fairly spacious here as well.

Next, time to do the ["shock ray emitter"](#).



That's what the VISUAL DICTIONARY calls the chrome truck rim. Note: I used a 1/24 rim, however, there are 1/25 kits. Use what you can find and adjust accordingly. Don't worry, what ever you use will look great. Find the reference line between the one you used for the tank treads. Place a mark approximately 36 mm from the bottom of the hemisphere. You will need a hole 2.2 cm (7/8 inch drill bit is what I used) in diameter centered on that mark. I would recommend drawing everything out in pencil before you start DRILLING away. You really don't want to ruin the PLASTRUCT hemisphere. HOWEVER, if you do...goof like I did and drill a hole 1/2 inch off. DON'T panic. The mistake is easy to fix with epoxy putty, or super glue gel.

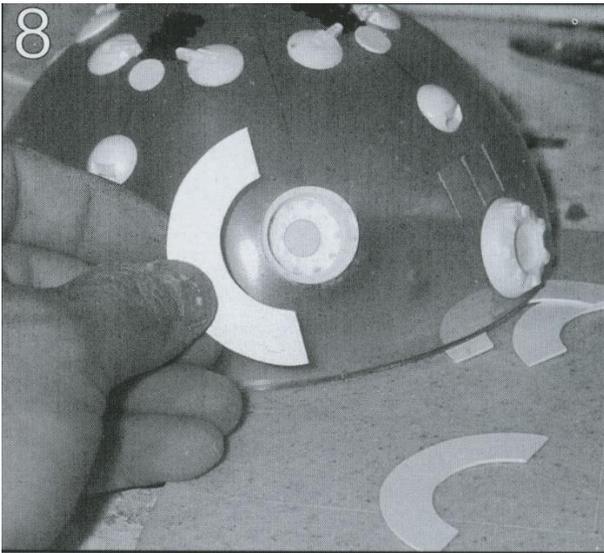
Each of these soon to be holes will be surrounded by a round band of (.040) styrene with notched cut out of the top and bottom (Refer to [figure 2](#) and [B & W photo 7](#)).



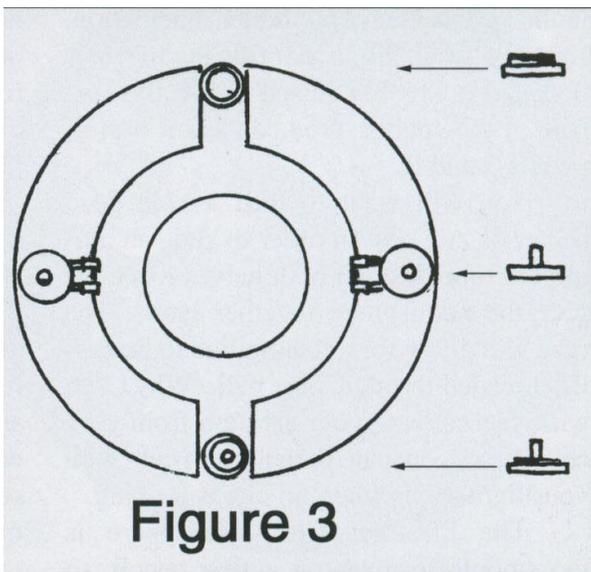
This is difficult as you are trying to draw an even band on a curved surface. A 46mm diameter circle with a 23mm diameter hole in it that has been split will get you in the ball park. However as you lay your two pieces on the round hemisphere you will notice they "squish" at the top. Seven is the magic measure between the two halves. You need 7mm of space between the left side and the right side on both the top split and the bottom split. There is 4mm from the inside edge of the plastic to the very edge of the hole you will be drilling for the truck rim. The very top and very bottom get most of the trim (refer to figure2). Figure it out? Good make 7 more sets!

**Note: If I was going to build this thing again, I would Vacuum form over one of the sphere halves, then cut out the circles eliminating this issue. However the measure would remain the same.**

The truck rims will be inserted later after you have finished painting, but I drilled one hole to test fit the "look" ([B& Wphoto 8](#)) of the circular strips.



Around each of these circular strips there are 4 smaller circles ([figure 3](#))



The first two are small circles placed in the space between the two circular strips. Each of these circles are placed flush to the outside edge. These circles can be made by using sheet styrene. Cut a circle 7mm in diameter, place another on top of it that's only 5 mm in diameter. The bottom circle has a post coming out of it about 4mm long ( .062 rod ). I'm sure these are tank wheels of some sort. When I made my remote I scrounged through an old parts box and found something really close. (Hint again, check the Sherman Model, or the ANZIO ANNIE or the other RailGun Model)

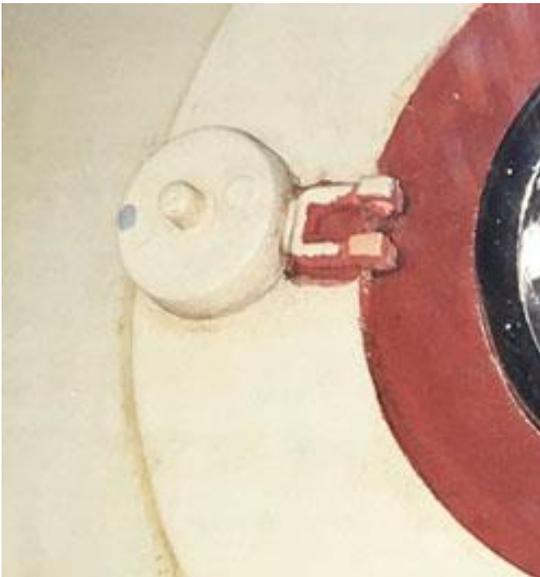
Two more circles are placed at the 9 and 3 o'clock positions on the strips. I believe these are the ones from the Sherman Kit I mentioned earlier. I didn't see those parts until recently. I

actually made mine from .080 sheet styrene to cut out the circles and placed a 1.5 mm high piece of rod (.062 mm) in the middle. These circles will look very similar [to the one at the base](#) of the above tank tread.

(Note: the "south hemisphere" the disc in the 3 and 9 o'clock positions do not have the 1.5 mm high rods. Instead there are "cones". The cones are 3mm high with a 3mm wide base tapering to a 2.3 mm point. Think of a tiny orange traffic cone with a flat top and you will get a good mental picture.)

The two discs at the 3 and 9 o'clock positions have what look like two "cannons" pointing toward the center at the truck rim. Originally, I scratch built this part with small rod plastic rod and some clay. I then molded the part and trimmed it so it would "wrap" against the circle its attached to and point towards the rim but not touch it ([Refer to figure 3 above](#)).

**Funny story, because the MASTER REPLICA remote was "referenced", these very parts appear on each an everyone. The actual part is the U BRACKET in the Panther kit and should look like this:**



We are almost done with the assembly. You should have both hemispheres completed. Before you glue them together, test the fit to make sure may need light sanding to ensure a nice flat edge to edge seam. Refer to the photos of the completed model. You want to glue the halves together so that the north hemisphere's truck rim is in line with the south hemisphere's tank tread. You should get a "zig-zag" pattern that runs north-south, see it? If you have truck rims above truck rims, rotate one of the halves 45 degrees. Bingo!

Two more things we have to glue on to complete the assembly. There is a [series of rectangles spaced along the "equator"](#).



They measure 3 x 1.5 cm and are evenly spaced between the tank hatch in the northern and southern hemispheres. Before you glue these on, you may want to sand and putty the seam below the tank hatch where the rectangles will not cover. Once you have done so, glue them in place. The last item for assembly is the [truck axle bracket](#).



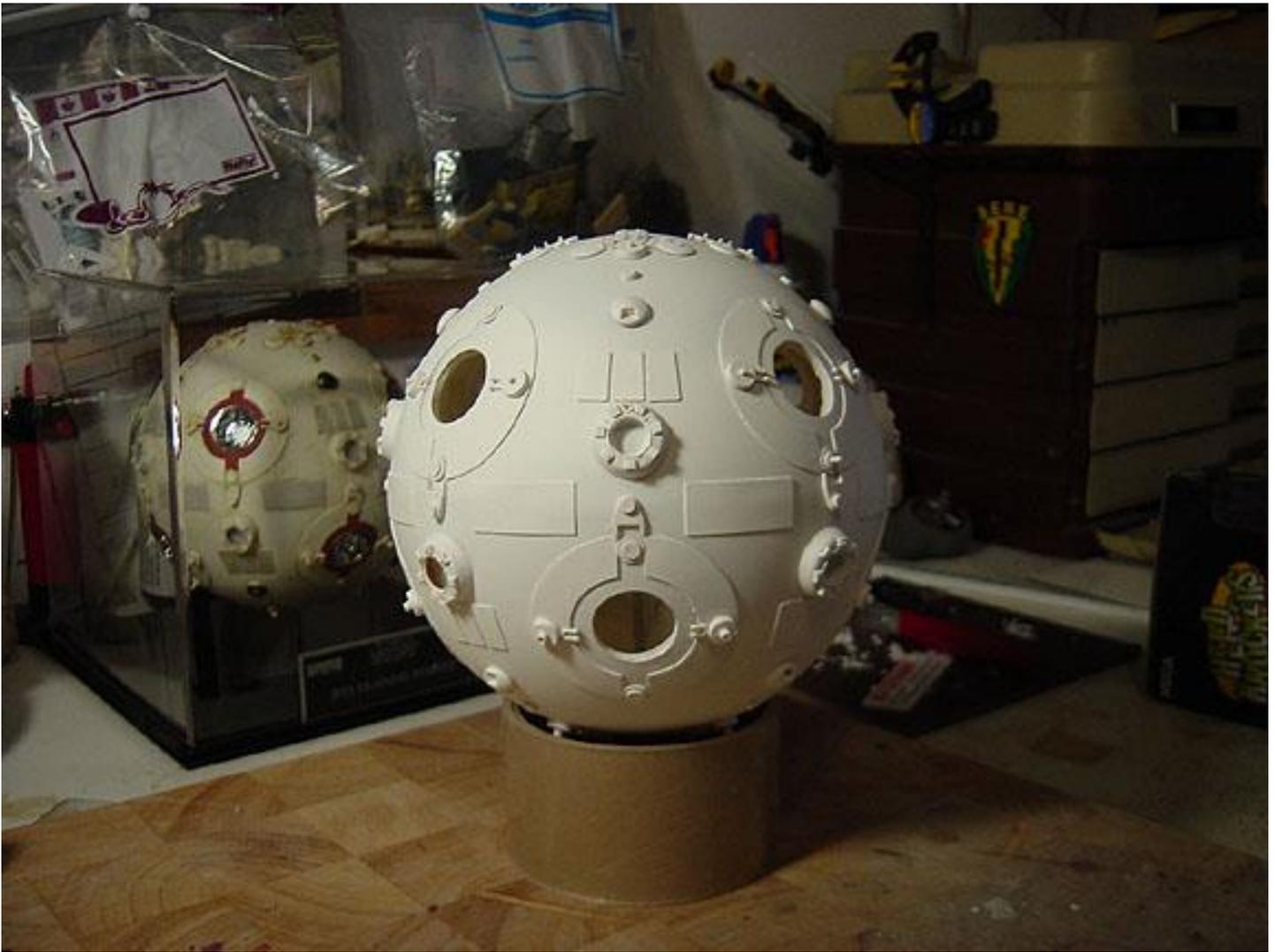
You will probably find 8 of them in the same kit you found your truck rim in. Almost every ERTL model truck kit has one. Glue it between the tank hatch and the circle that is under the truck rim. The two prongs on the bracket point toward the chrome (refer to the pictures).

Now,....to paint the ball. The intent is to supply color reference even if you BOUGHT THE [MODELERS RESOURCE](#) magazine that featured my article (shameless plug). I hope to add some info here. By the way... This magazine ROCKS!! Im not just saying that because Im in it, I happen to be in two other magazines. I just like Fred and his vision on WHAT a good Modeling rag should be.

## Painting

The actual ball has faded over the years. In fact...its actually yellowed. If you have pictures from STAR WARS exhibit in DC, the colors may differ from what can be seen on screen or in earlier photos. The ball is basically an off white with heavy weathering. You can paint your ball with any technique you wish to try. Be creative!

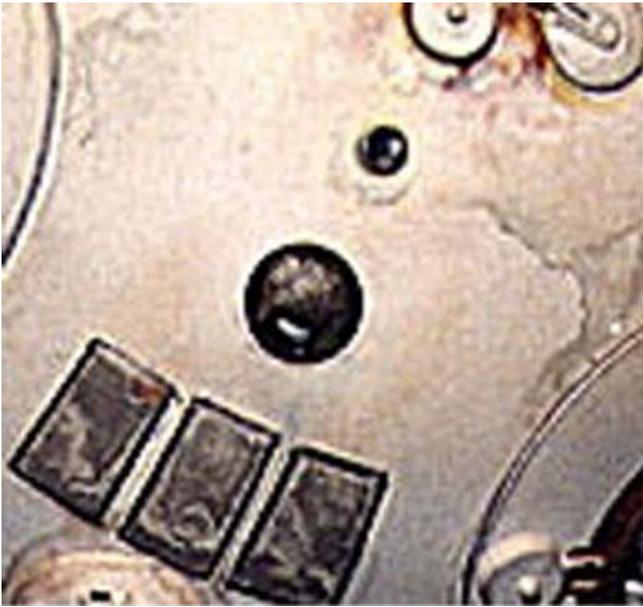
If you glued your SCOTCH-LITE in your hatches, remember to stuff tissue paper into the hatches to protect the SCOTCH-LITE from paint. I painted the ball with Model Master's flat white as a base coat. Letting the paint dry in between coats, I used Gunze Sangyo's H-316 ( Navy F-14, F-4) white. I like the way this paint airbrushes and this particular color is an off-white that worked for me. I then dull coat the ball with two coats of Gunze Sangyo clear flat [\(photo 1\)](#).



Once dry, I paint Polly S "red metal primer" ( # 50006 ) in the recessed area around the truck rim hole. There is also red between the two "canons". The tank treads look rusted. I used Windsor & Newton's Yellow Ochre to light wash the edge of the tread ([photo 2](#)). I went back over it with a [second wash](#) using Windsor & Newton's Burnt Sienna to add the red color to the rust.



Remember that post that is above the Panther gun port? The top is painted silver, leave the sides alone. The gun port is painted metallic black, or gun metal. The three rectangles below the gun port are gray [\(photo 6\)](#). They look worn in my reference photos, but evenly painted in the film. I used Polly-S Stone Gray (#501415). I tried to match the worn look by using a wash letting the under color show though in spots.



These photos are out of order...but this photo shows the series of [rectangles that are along the "equator"](#). The exact color I am not as sure of as the other colors previously mentioned. In the film they look light blue gray. In the pictures I have from the DC exhibit they look even lighter gray. I honestly have no idea and can only suggest you use what strikes you as correct depending on the reference you are using. I like a bit darker color and used Polly-S light blue gray (#505242). The color looks very even so I airbrushed it [after masking](#) the rectangles. After I paint all the rectangles on the equator, I LIGHTLY airbrush the original off white color over them to subdue them a bit. Note: final photos of the ball were taken without this step.



[Photo 6](#) shows the ball ready for the FINAL weathering. I used Windsor & Newton's Black giving my ball a nice black wash, dabbing it off with a rag here and there. Letting the paint "sit" for different amounts of time before you dabble off gives various intensities of stain. The STAR WARS Universe has a dirty "used" look. Weather until you think it looks right.

Once you are done with your weathering spray another coat of dullcoat over the ball and let dry. Now get your rims and add SCOTCHLITE to the center of them from behind. Glue into place very carefully as you do not want to get GLUE all over your red oxide paint. I usually insert them and then drip HOT GLUE on them from the opposing open rim hole on the opposite side of the sphere. When the rims are done your remote is ready for display. Fishing line can be inserted through the center tube and the remote can be [hung from your ceiling](#) or [in a case](#) for a "realistic hovering look". It can also be [displayed in a case](#) next to your favorite lightsaber! Your version should look [something like this](#). Your JEDI TRAINING may now begin!!

