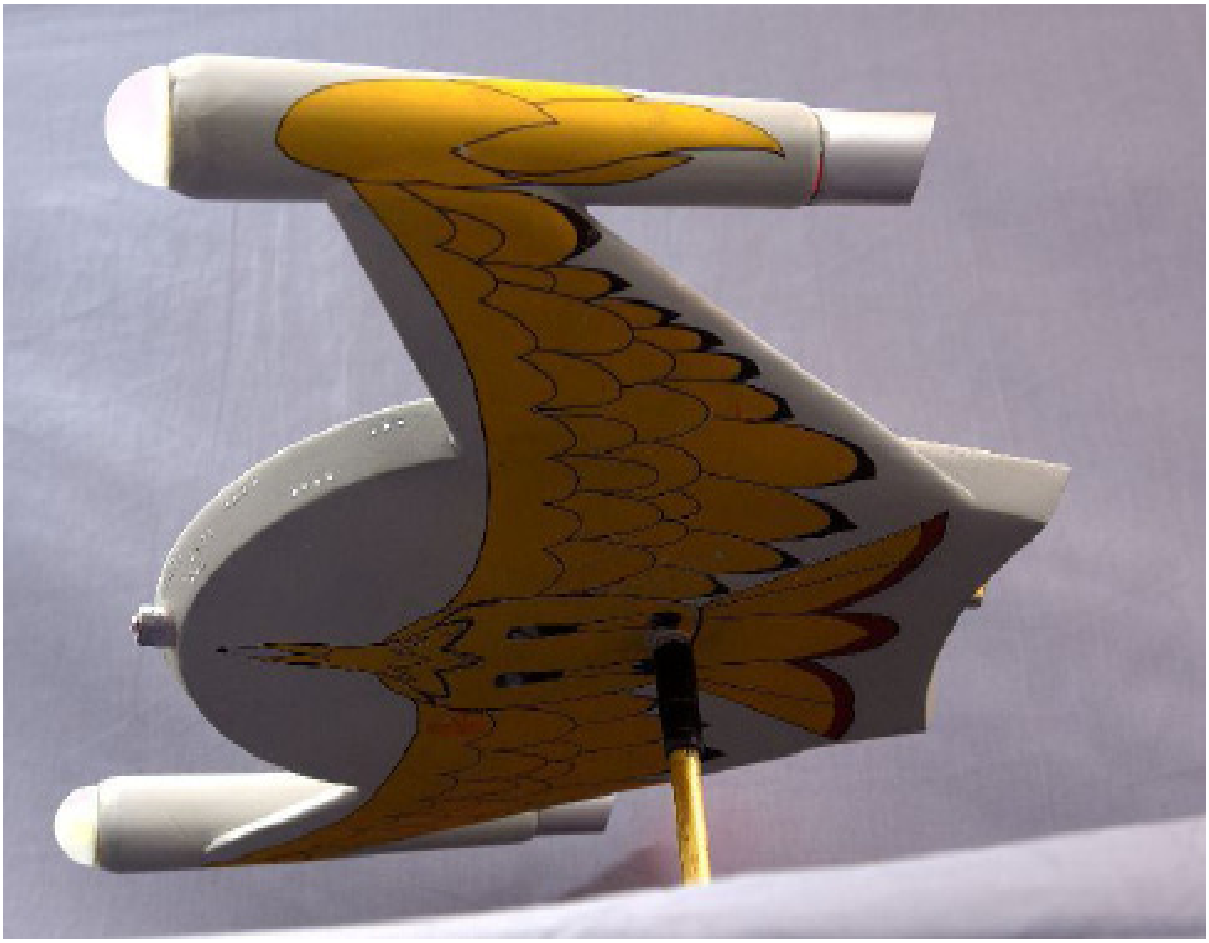
AW STUDIOS



The Great Bird of the Galaxy

1/350th Scale Enemy Starship
Vacuform Model Kit
Construction Manual

Thanks for purchasing the 1/350 Vacuform Great Bird of the Galaxy!

This is a replica of the "Romulan Bird of Prey" as seen in the episode "Balance of Terror" from the original Star Trek television series. This model was mastered by Richard (REL) Long and vacuform molds created by AW Studios.

As with most vacuform kits, the modeler needs to take a little more time into putting it together. Typically, vacuform kits do not have registration pins or tabs, so the modeler will have to add these themselves. If you have ever scratch built models or parts, then this should be second nature to you.

The build-up in these instructions is to be used as a guideline, but is by no means the only way to assemble the kit.

The main thing is that you have fun doing it!

AW Studios would like to thank the following:

Our "Angry Wives", for putting up with us, the smell of melting plastic, paint fumes, etc.
Richard (REL) Long for making an awesome master. He is one of the best out there.
Tony (Raist3001) Napolitano and Jack (Fokkerpilot) Bruner for their support and encouragement.
Rush Zbir for help with printing the decals and vinyl windows.
Tom (ModelMan) Piedmont for this Construction Manual's layout.
And last, but not least, the Great Bird of the Galaxy himself– Mr. Gene Roddenberry
for creating the most fantastic science fiction phenomenon ever.

May you all Live Long And Prosper.
-Scott Einolf of AW Studios-

Tools and Supplies Needed

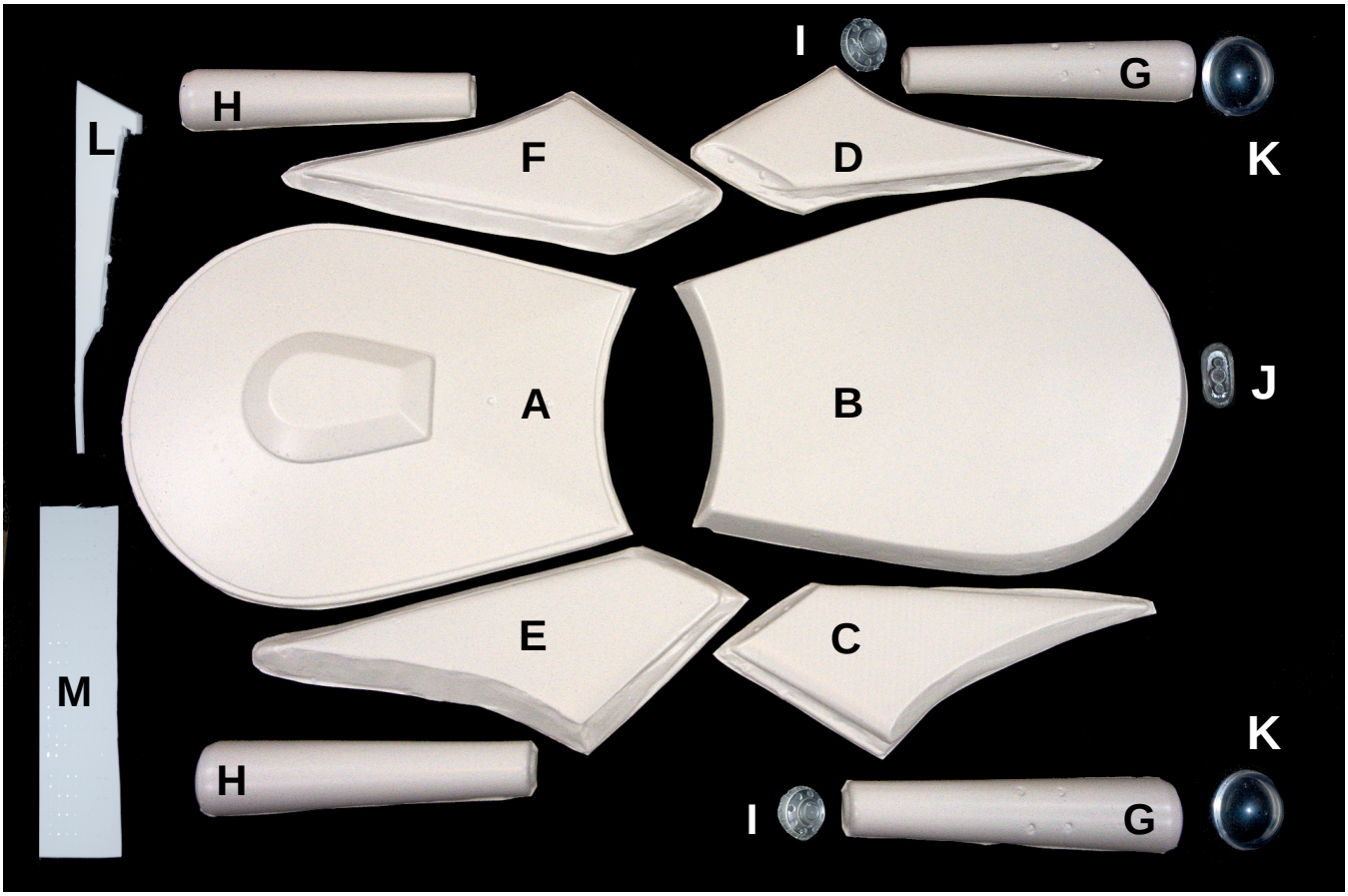
- X-Acto Knife
- Dremel Tool
- Thin styrene strips for making tabs
  (such as Evergreen Scale Models #176).
  (you can use smaller pieces if you prefer).
- Super Glue (such as Loctite)
- Model Cement Glue (such as Model Master)
- Pin Vise, drill bits and Jewelers files
- Reflective AC Duct Work tape
- Scissors
- Apoxie Sculpt– Never start a project without it!
- Bondo Glazing Spot Putty
- Duplicolor Automotive Primer
  (High Build and Sandable cans)
- Rustoleum– Frosted Glass Spray & Metallic Chrome
- Various Grits of Sandpaper 200-600

If lights will be added:
2 green LED's, 3 red LED's, 5-10 white LED's, single strand 26 gauge wire (and threaded wire), solder and soldering iron/gun, heat shrink, electrical tape, wire strippers, power switch, power source ("wall wart" power transformer or battery)

INDEX

IMPORTANT NOTE:
Be sure to read this manual thoroughly before starting! This is not a step by step procedure, but an overview covering all aspects of the build.

Wash all parts in warm soapy water to remove any mold release.



PARTS LIST

A– Hull Top
B– Hull Bottom
C– Top Wing Starboard Side
D– Top Wing Port Side
E– Bottom Wing Starboard side
F– Bottom Wing Port Side
G- (2) Bottom Half Nacelle
H- (2) Top half Nacelle
I- (2) Nacelle Engine Insert
J– Plasma Cannon Emitter
K- (2) Clear Nacelle Bussard
L– Tail Fin
M– Vinyl Window Frames
N- (2) Decal Sheet

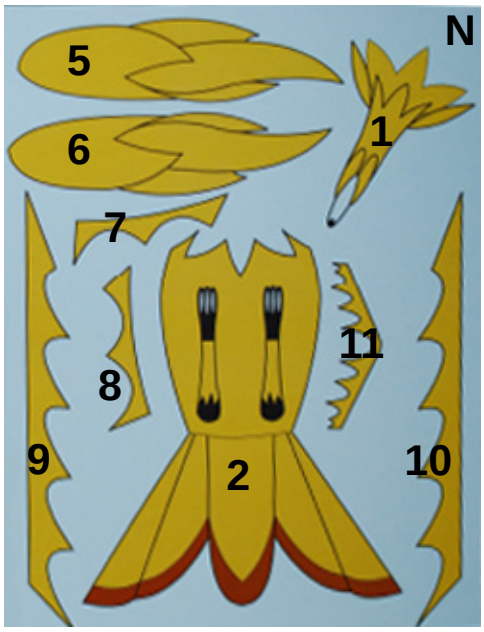
DECAL LIST

Lower Hull

1- Head
2- Body
3- Starboard Wing
4- Port Wing
5- Port Nacelle
6- Starboard Nacelle

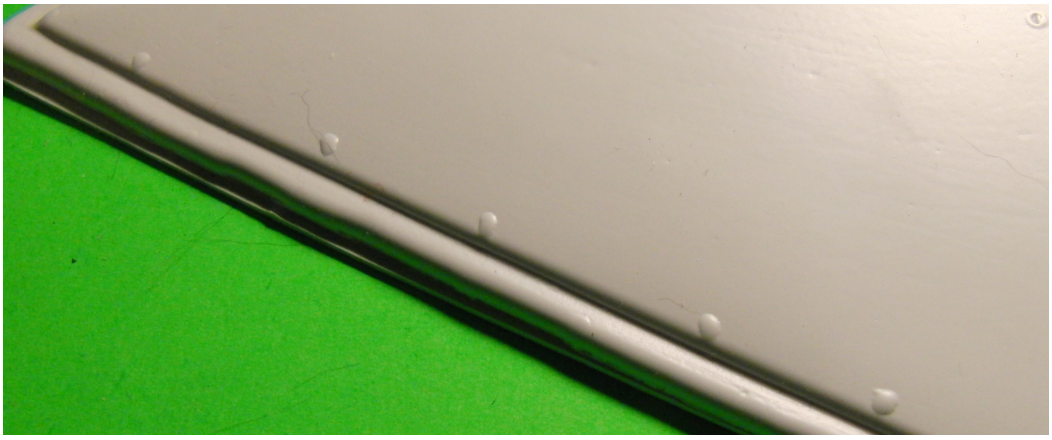
Upper Hull

7- Port Aft
8- Starboard Aft
9- Starboard Wing
10- Port Wing
11- Tail Fin Wrapper



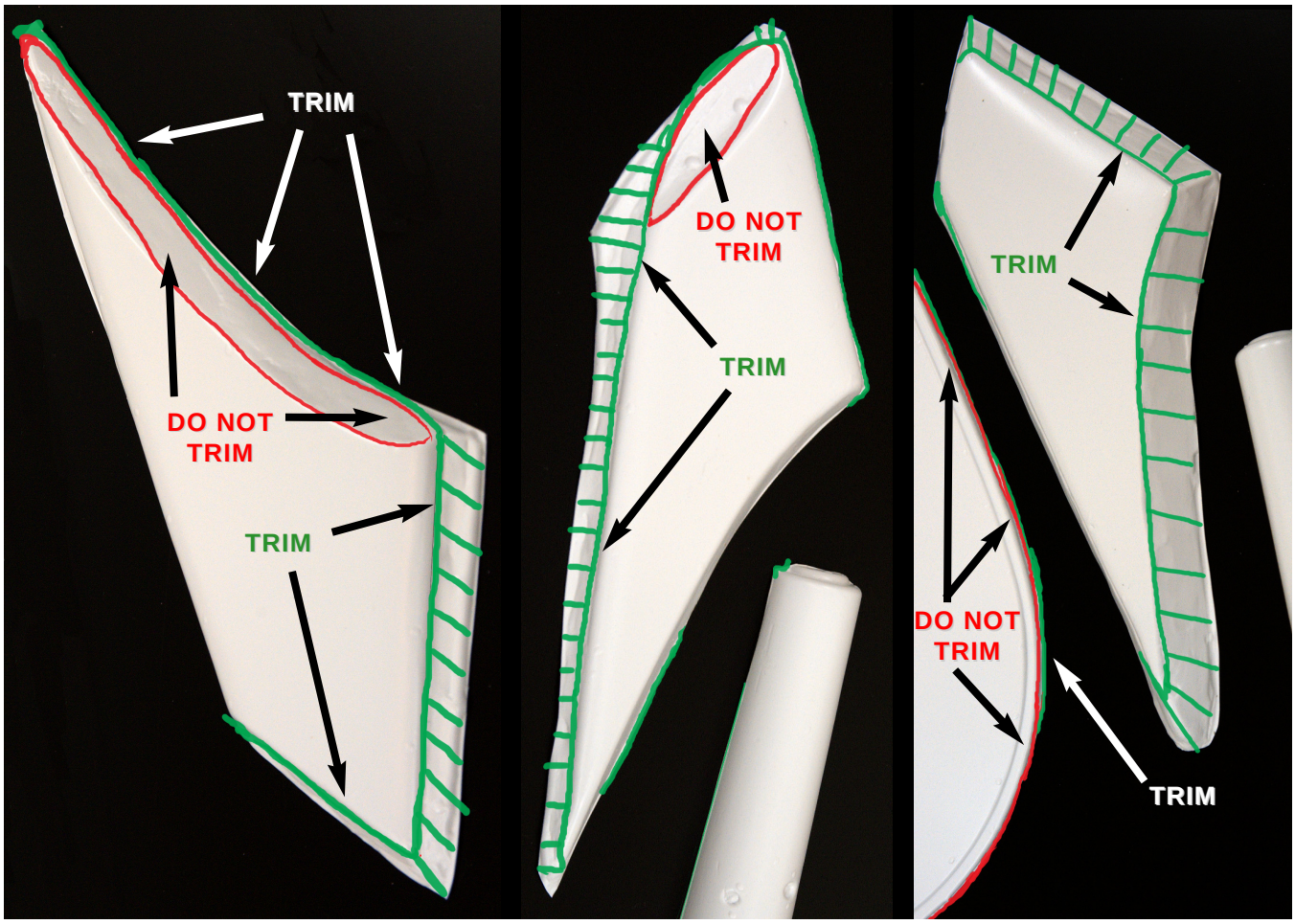
Part I: Cleaning the Kit

One thing you will notice on the vacuformed parts are tiny dimples, similar looking to rivets. These are an artifact of the vacuforming process and help draw vacuum into the female mold. These dimples are easily sanded off with some 400-600 grit sandpaper. They typically occur around perimeter areas, but not always.



NOTE!
Be sure to wash and scrub the Tail Fin with warm soapy water! This is a resin piece with mold release on it. Failure to do so will cause paint and gluing issues!

As with any styrene, resin or vinyl kit, there is some flashing to clean up. We trim as close as possible before shipping your kit, but do leave a margin in certain areas. This is where your Dremel, X-Acto knife, files, sandpaper, etc., will come in handy. Here are some photos to help guide you. All areas marked in green are to be trimmed. DO NOT trim the areas in red! Red means no! These are connection points. Constantly test fit your pieces as you go along.

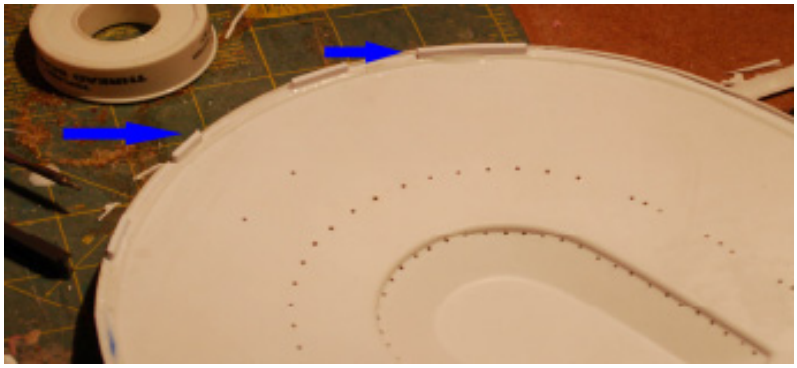


Be very careful in trimming the upper hull! Do not trim the 'ledge' away or the part will not fit to the bottom hull!

Here is a wing with the flashing removed. You will want to sand and file briefly to get a nice clean edge.

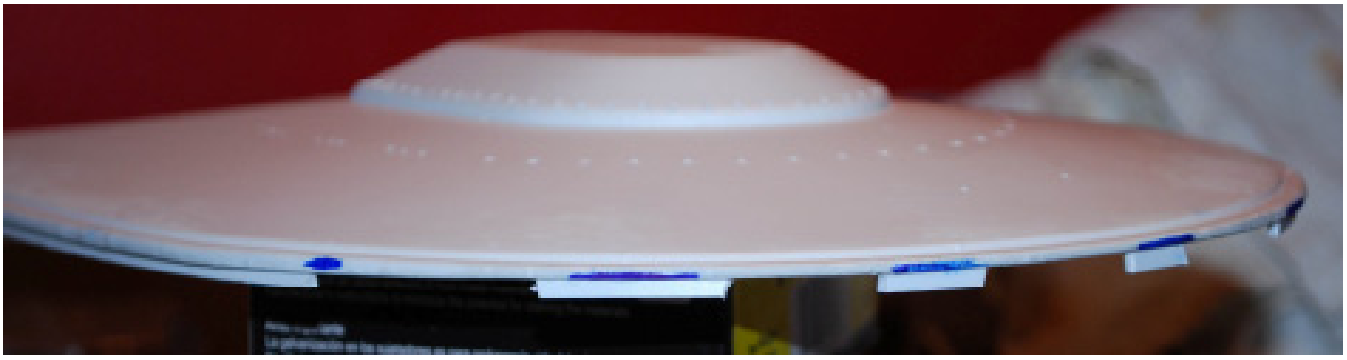
Part II: Fitting the Parts

One of the most difficult aspects to vacuform kits is the lack of registration tabs. The solution is to create your own. This section will demonstrate attaching tabs to the main parts before joining those parts together.

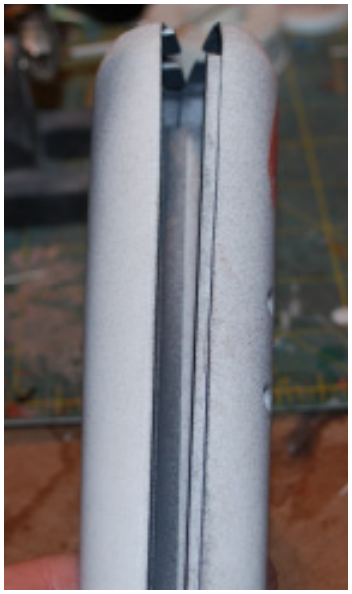


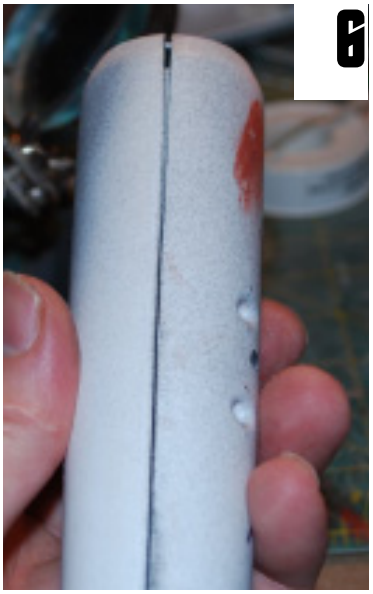
Using thin styrene strips, attach them at several locations around the perimeter of the upper saucer and along the edges of one half of each wing and each nacelle half.

Ensure that the tabs are far enough away from the edge so you can easily lay the top hull onto the lower hull.



Also be sure to space the tabs so they do not block the windows of the lower hull. However, this should only cause problems for those lighting their build. Test fit both hull parts often before committing to glue. Immediately pull up any styrene that is causing an issue and start over.





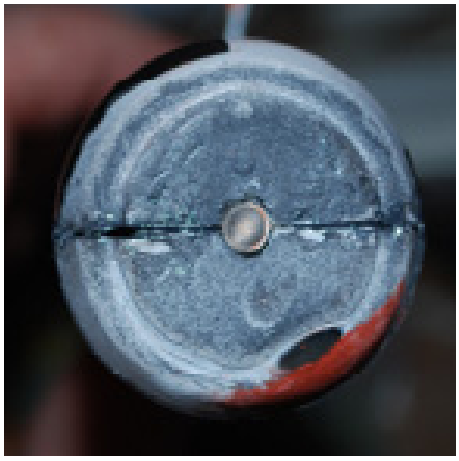
NOTE: If you are going to light the kit, run your LED's and wires before you seal any parts!

You will notice there are two pairs of two registration holes on the nacelles that match up to the wings. Test fit them to see which one matches up to each wing. Once you identify it, you can putty over the other tabs. In this picture, you can see that I marked an outline of where the nacelle will sit on the wing. This helps when you get ready align and glue them together. Set them off to the side once they are done

To fill the seams, try using Aves Apoxie Sculpt followed by Bondo Glazing Spot Putty.
You will need to sand and prime your work, then check to make sure the nacelle is round. This may take a few rounds of putty-sanding to get it just right. Take your time. Do not linger on section as that could create flat spots!

At this point, test fit the clear domes. You may need to file the beveled area on the front of the nacelle for best fit.

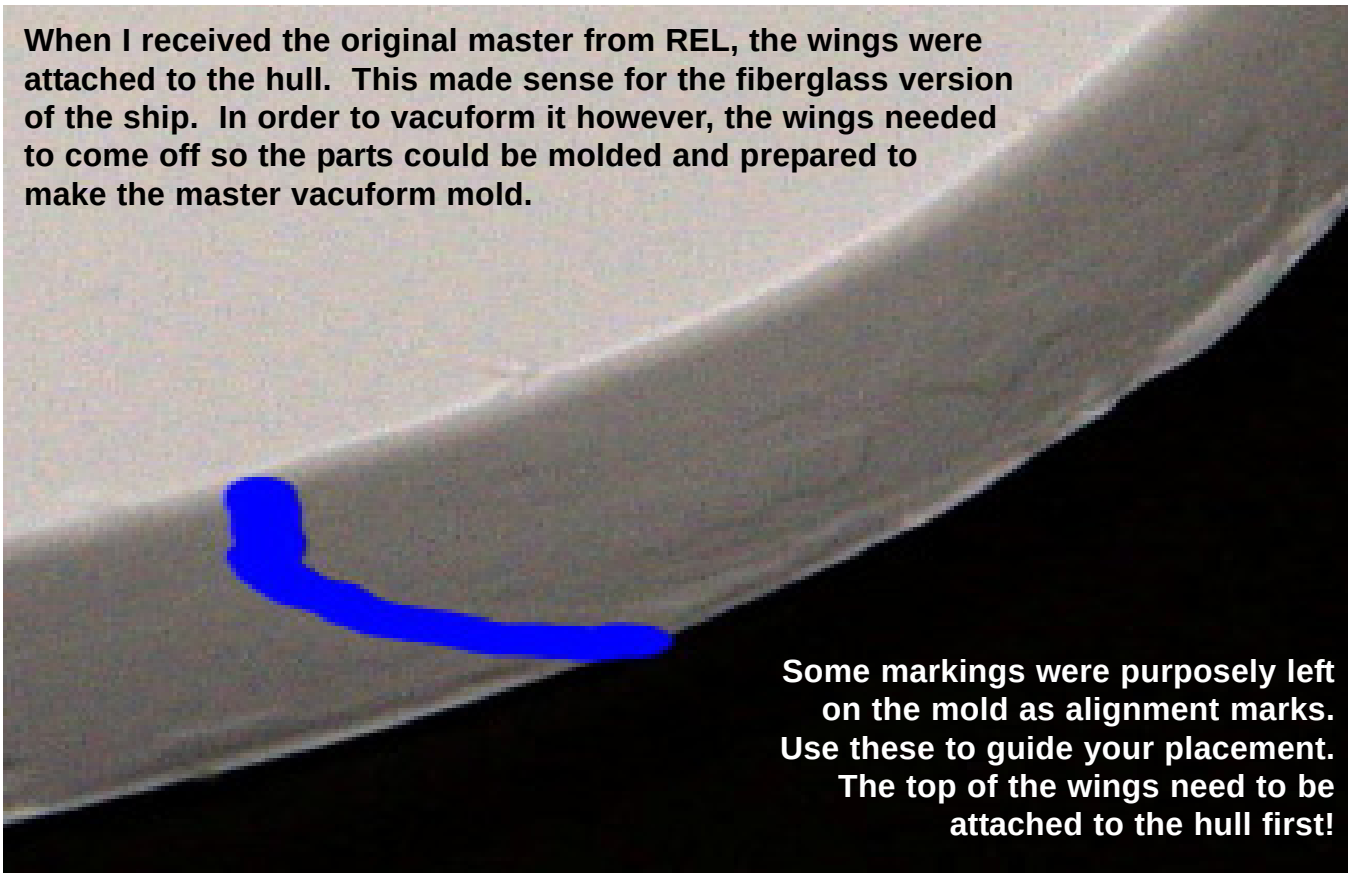
Test fit the aft engine shrouds as well.



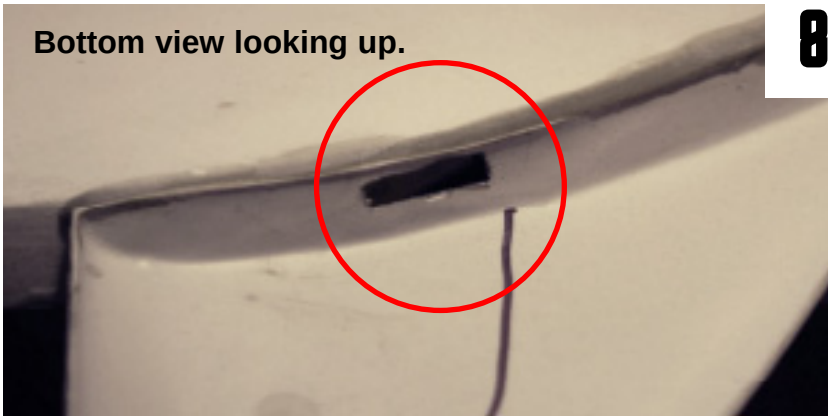
Part III: Drilling the Windows

Power tools are a wonderful thing, capable of solving most of humanity's problems. This is not one of them though! Get a pin-vise and drill these by hand. If you have a selection of bits, place one in front of the windows until you find a size that looks good to you. 3/64ths may be a good one. Proceed with patience and have your reference handy to ensure you do not drill an imaginary hole! Drill through the 'exterior' of the ship, then scuff away any residual plastic on the back side. Using the same drill bit, gently punch your way back through from the 'interior'. This will help make a clean bore hole.

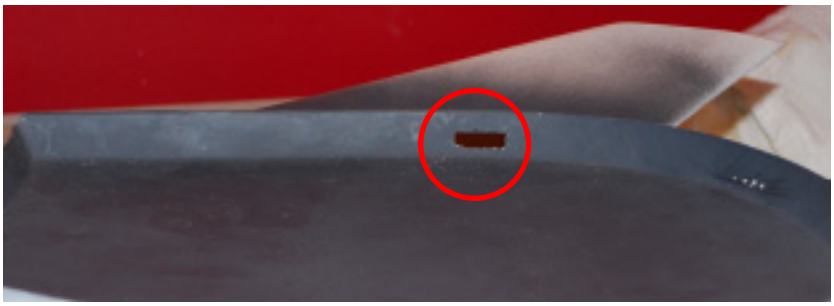
Part IV: It is time for some Wings -and not the Buffalo kind!

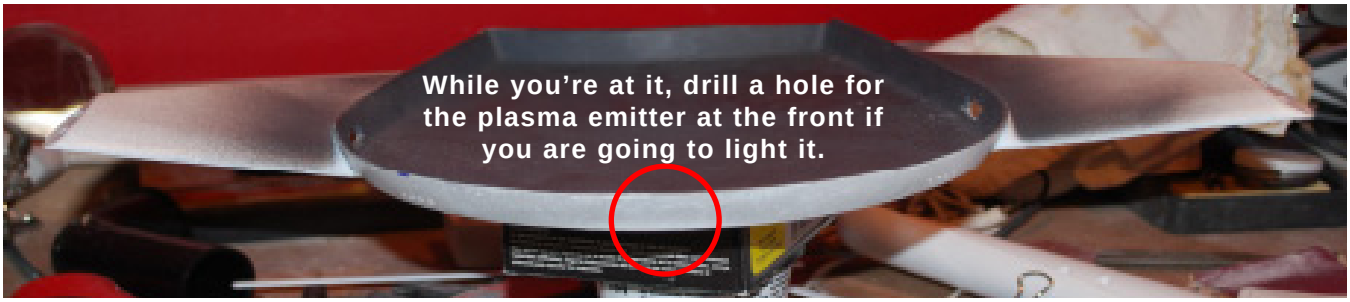


The wings of this ship are swept upwards. The angle of the hull wall and the angle of the wing's connecting wall should line up for the correct angle. Line up and attach one wing to the body. Test fit the second wing several times to make sure that it is symmetrical to the first. When you are sure, dab a bit of CA down to get an initial hold. Make sure it is good. When you are sure, seal the entire wing on.



You will notice that I cut holes on each side of the hull into the wings. This is for wiring and some brass support tubes. These will keep the wings from drooping over the long haul.





PART V: Mounting the Nacelles

Using the markings that you made on the nacelle earlier, you can set them on the top of the wings. Once again, use the marks to line it up. Then a combination of CA Glue and Cement Glue to attach them, followed by Apoxie Sculpt and Spot Putty to blend the seams together. This is also a good time to fill in the gaps between the top of the wing and the hull.

If you are like me, at this point you will start flying her around humming the enemy music from Star Trek! It will make you feel like a kid again.

I think you will be surprised at how quickly this comes together. I know I was.

Part VI: Lighting the Ship and Lining the Main Hull

Even if you don't plan on lighting the kit, I would recommend lining Part A and Part B with Reflective Tape. It really adds sturdiness to the hull. Just make sure not to cover up the windows. Or if you do, drill the windows out again.

LIGHTS!
While lighting this kit truly sets it apart, no electrical components are included. Therefore we will not go into details on how to light the kit, but give a list of some of the things you will need.

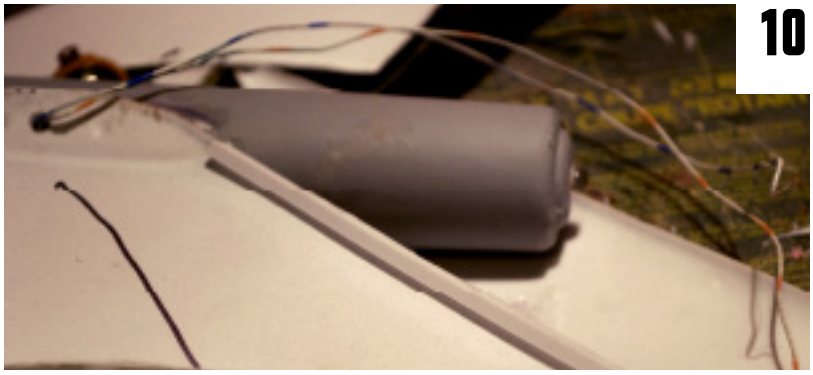
The sample kit in these directions was lit using 10 LED's. Two green, one in each forward nacelle: Three red, one in each aft nacelle and one for the plasma emitter; Six white in the main body. Wire, such as 26 gauge, should be adequate for the interior wiring. Light boxes are easily created with styrene and are used to block extraneous light. Painting the entire model black first will kill any ambient glowing. You will need a soldering iron or gun; heat shrink/shrink tubing is used to seal your connections, though electrical tape will work in a jiff. You will need to power everything with a power transformer, but you could use an external battery if you create a base or stand to house it. And you will need a power switch, also located outside the model, perhaps in the base. There are likely more little details not covered here.

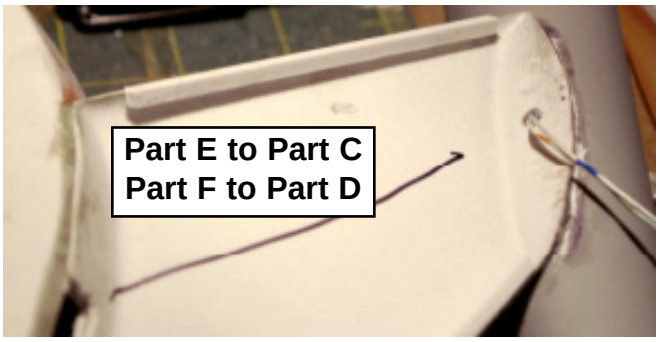
There are too many kinds of LED's, power supplies, resistors and more to go into detail here. Your best bet is to consult an online hobby forum such as hobbytalk.com. You will find a wealth of information from other modelers attempting to do similar work as yourself.

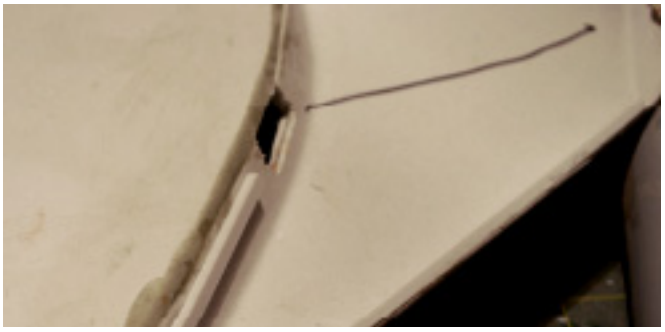
Warning: Electricity in all forms is dangerous and can kill!
Always take proper safety precautions when dealing with live wires! Good luck!

Time to attach the bottom of the wings to the tops.

Once again, use strips of styrene, to create alignment tabs. Try a combination of Cement Glue and CA Glue. The tabs will also be helpful for the Apoxie Sculpt to bond when filling in the seams.



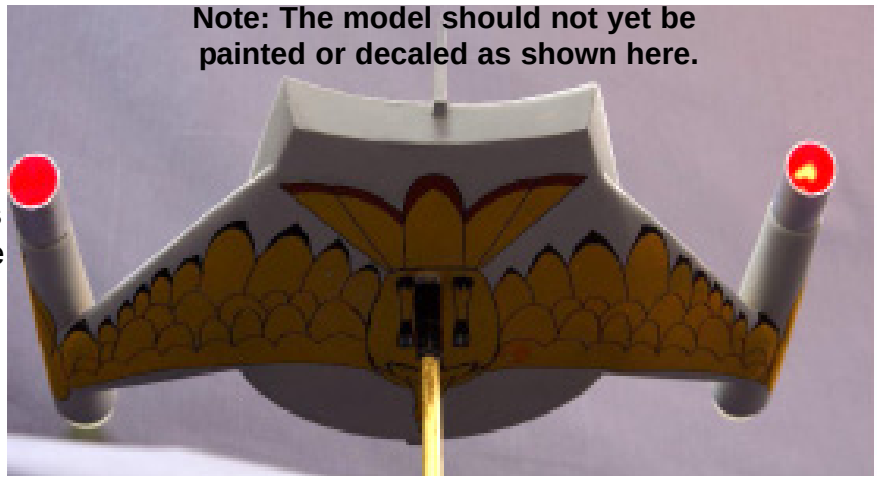




Make sure you run any wires for lighting before you seal up the wings! Once the bottom is on, blend the seams on all the parts up to now..

Part VII: Rigging

In this example, a 1/4” hole was drilled into the body. Into a brass tube, a 1/4” stereo phone plug was secured with JB Weld. Wires run from the stereo jack, down the tube, into the base where it connects to the power source. Inside the model’s body, a jack connects to the internal wiring. This setup additionally allows the model to swivel in any direction.



There are many ways to go about rigging a model for a stand. If you do not wish to drill a hole in the body, magnets inside the body and stand can be used; or even the ever-reliable fishing line to hang it from a ceiling.hook! If you do light this kit, you must drill a hole somewhere though.

Part VIII: Final Assembly

Now for the moment of truth! Take the upper hull and, using registration tabs you glued in previously, place it on the lower hull. If you've been test fitting all along, it should fit though it may still need some adjusting. Using a combination of CA Glue and cement glue, glue the top to the bottom hull. Unfortunately I do not have any pictures of this process.

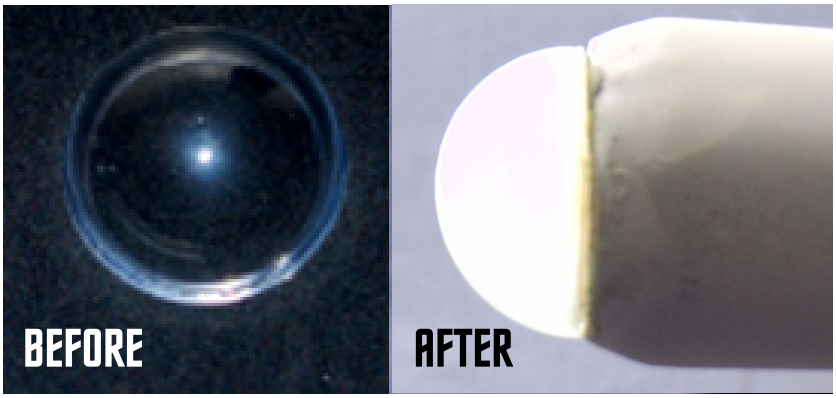
Once together, it's time for putty (Apoxie Sculpt and Spot Putty). The main hull should have sharp corners, so you may need to sand and putty several times to get it correct.

In doing this, you will most likely sand the window frames off. Don't worry though. The vinyl replacements can be used once you have finished sanding everything.

It is a good idea to prime the entire ship and check for imperfections. I use Duplicolor High Build Primer on the first few passes. This helps fill in imperfections and show you what still needs to be done. Once you're satisfied, place the Vinyl Window frames around the window holes you've drilled. They are tiny so take your time. You should have more than enough for all of the windows on the top and bottom hull.

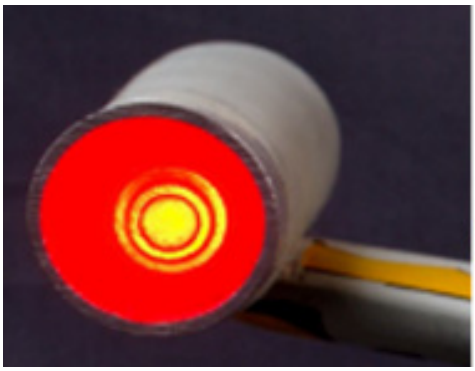
Part IX: Finishing Touches!

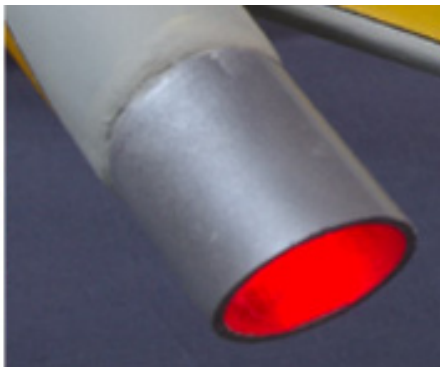
A. Bussards- The first thing you will want to do is frost the domes. I used Rustoleum's Frosted Glass Spray. It will take several coats on both the outside and inside of the dome. Now, glue the bussard to the nacelle. Be careful not to craze the plastic w/ excess glue!



B. Rear Engine Detail-

It is up to you if you want to paint the inner engine detail on the end of the nacelle. If you light it, it does not really matter. If not, paint it to your own color choice. This is Rustoleum's Metallic Chrome. Glue the part to the nacelle.

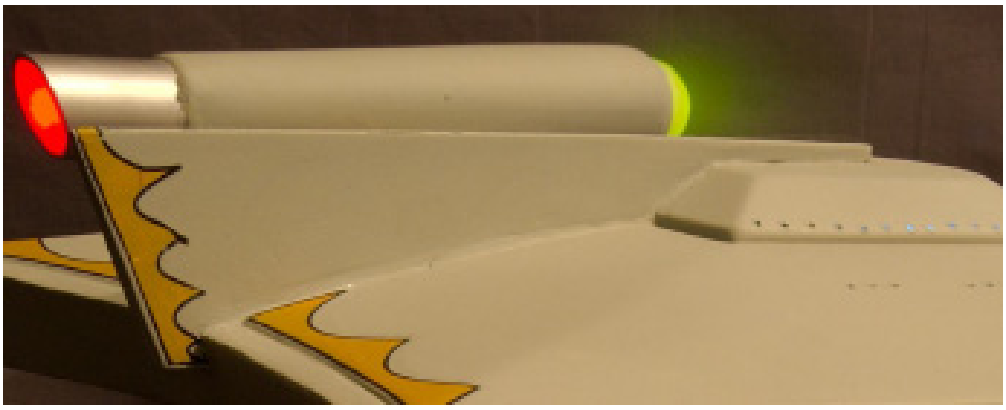
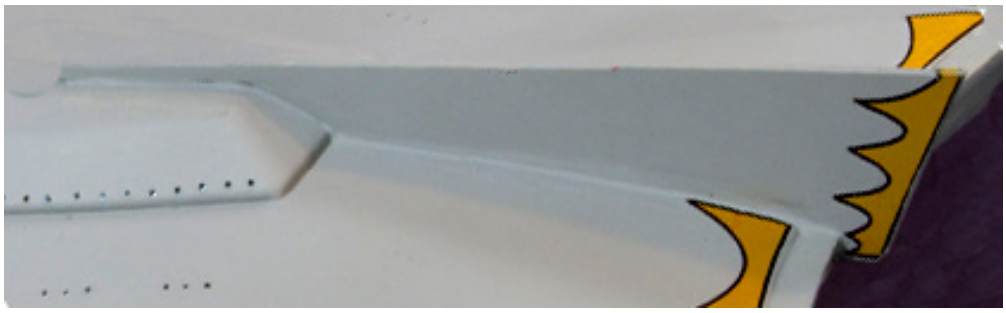




C. Top Fin-

This just needs a little flash clean-up first. Using superglue, set the fin (Part L) on top of Part A. There are alignment keys. You may have a small gap which can be taken care of with a little putty and sanding.

The back of the fin should hook right over the edge of the hull's stern.

D. Plasma Emitter-

This is cast in clear resin should you choose to light this part. On the forward lower hull, you will see the attachment point.

If you are going to light this part, make sure you drilled a hole into the hull and ran your wires and LED before you sealed the hull!

I sprayed the part with a dark gray primer, making sure to only mist the inside of the launcher. I wanted to make sure that when lit, it looked like it was fired up. I then used Metallic Chrome paint on the outside of the launcher and the tips of the three tubes. I drilled a tiny hole in the back of the part for the LED to fit.

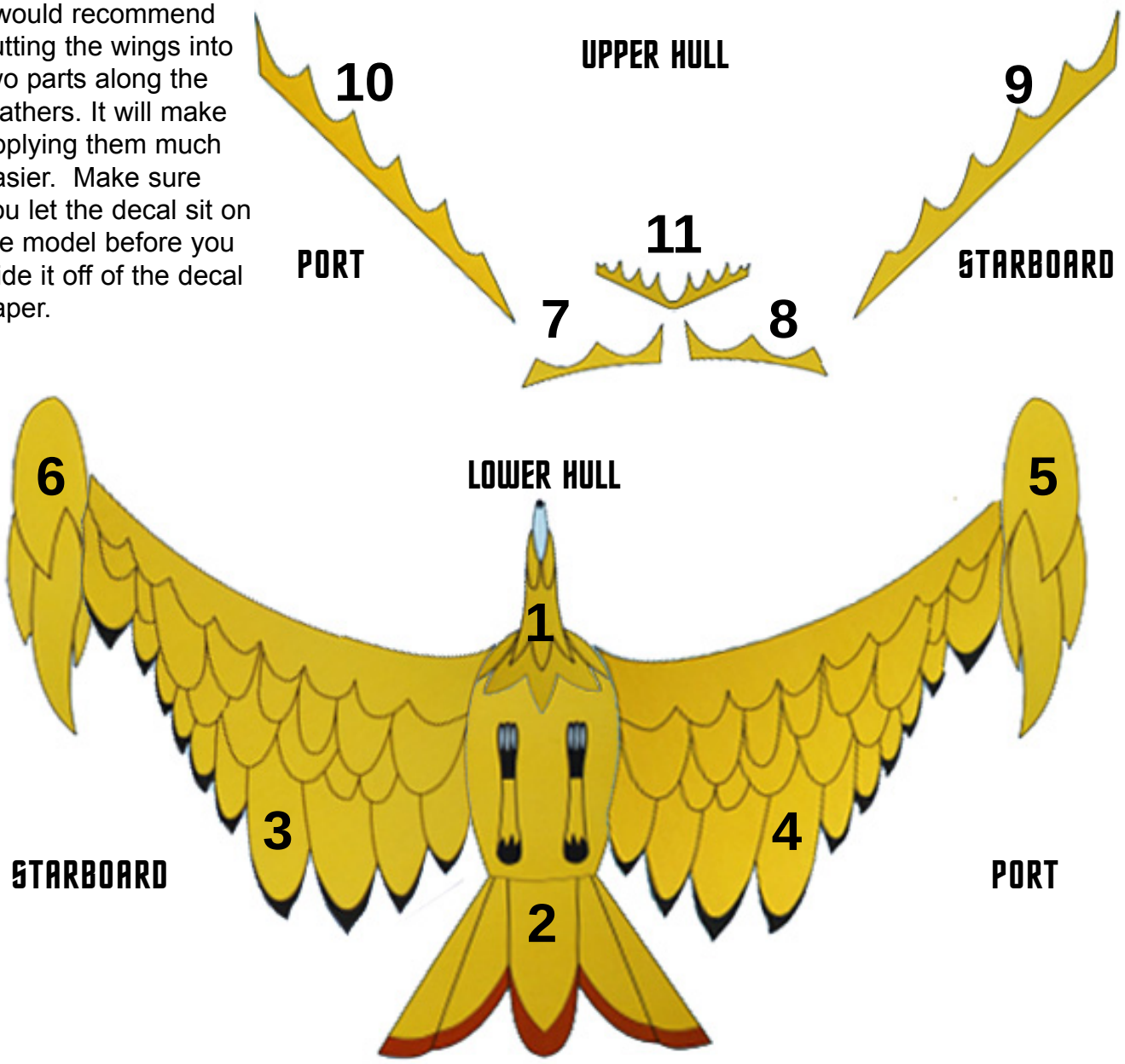


Part X: Paint and Decals

There are two basic paint schemes for this ship. Traditional and the 'Remastered Look'. It's all up to you. Regardless, you should prime the body for a consistent final color and good paint adhesion. If you are going for the TOS look, Tamiya Fine Primer is a close match to the TOS color. Watching the Remastered episodes for reference on the Aztec look is your best bet.

As with any waterslide decals, you want to have a warm bowl of water to float them in. There are various decal setting solutions and aids such as Microsol, Solvaset and Walther's.

I would recommend cutting the wings into two parts along the feathers. It will make applying them much easier. Make sure you let the decal sit on the model before you slide it off of the decal paper.



Finally, after it has fully cured, seal the body with a clear coat or dull coat, whichever you prefer! And that is all! With your completed Bird of Prey, you can now swoop down on unsuspecting Federation personnel lurking around your home!

We hope you enjoy this kit as much as we enjoyed bring it to you.
Again, thanks to the many folks who helped make this a reality, including you, the customer.
It is for you this effort has been made. -Scott, 2009