

KIT NOTES for The Clyde Puffer Steam Cargo Boat

These notes generally follow the page order of the files that come with the kit.

As we have mentioned numerous times in the BLOG on our website, www.clevermodels.net, this kit is being produced in O scale with instructions in the “Please Read This File First” folder on how to produce any other smaller scale, as you print the kit.

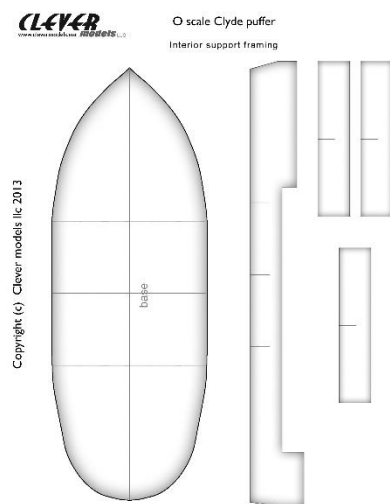
Please read these instructions completely before you attempt assembly. Also, be sure to read the “General Modeling Instructions” in the “Please Read This File First” folder. All the information contained about cutting, folding, edge coloring, etc. apply to EVERY piece of this kit.

In these instructions, I will use the term “embossing” quite a bit. This is a method used to achieve nice, straight folds in the card. Other manufacturers typically will tell you to “score” the fold lines on the outside (printed side) of the kit pieces. Unfortunately, after you fold the piece, this leaves a white line that must be colored to blend in. Embossing is the method I use to produce a much better result. To emboss a fold line, you use a pointed, but rounded instrument, like an ice pick with the tip slightly rounded, on the back (unprinted side) of the card to impress or emboss the line. What you are trying to accomplish is to make a depressed, NOT CUT, line. This produces a weakness in the card that allows it to bend right on that line. Embossing is always done on the “Valley” side of the fold.

Always complete all the necessary embossing of fold lines before you cut out the kit parts. If you are making a “Mountain Fold”, one where the parts fold “away” from you, your fold lines will be embossed on the back (un-printed) side of the sheet. Use your knife to make small cuts right on the red fold lines where they extend out from the part. Turn the sheet over, white side up, and connect the cuts with the embossed fold line.

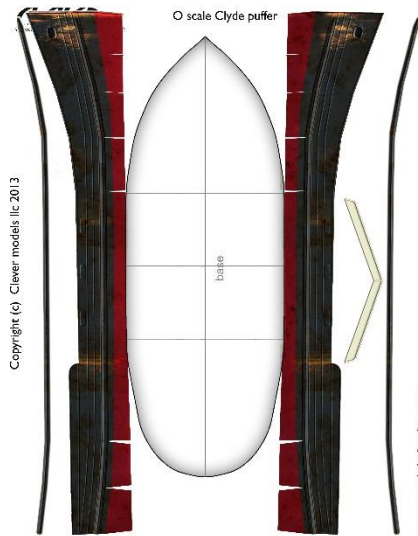
Typically, we would suggest that you start construction with any wall, building it completely before going on to the next. But since there is major assembly that must be done before we get to any walls, let’s start there.

Building the HULL



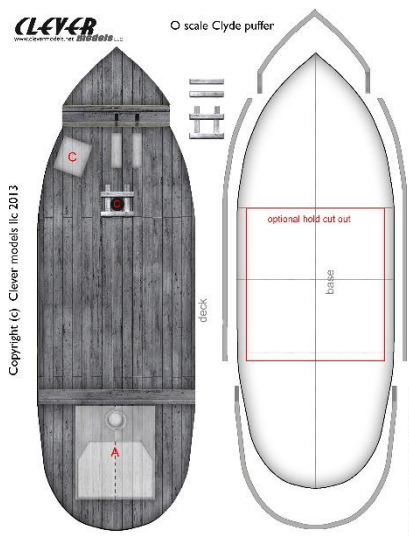
Page 1 is shown at the left.

- Cut out the 5 pieces on this page.
- The 4 pieces on the right side of the page have lines indicating where slots need to be cut. These slots need to be just a bit wider than just a simple cut. They need to be a card thickness wide. If not, they will bind in the next step and distort the shape of the parts.
- Take the 3 rectangular shaped pieces and intersect their slots with the slots on the long “keel” piece.
- Place this assembly on top of the base. (The hull shaped piece.) They should line up with the lines on the base.
- Once they are all lined up, place a drop of ACC on top of each intersection. It will drip down, and capillary action will pull the glue into the joints.
- Once the intersections are secure, add more glue to the ends of each piece and then as you think is needed to make a **solid** assembly.



Page 2 is shown at left.

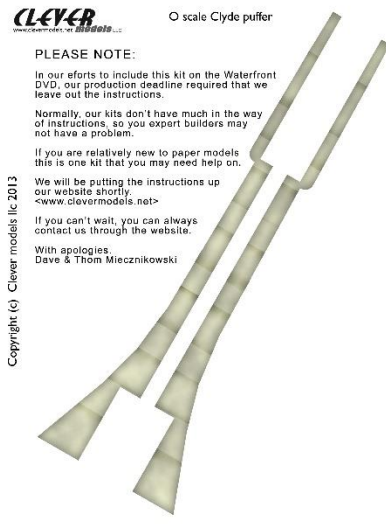
- Emboss 2 fold lines, where the base meets the hull. These should be “mountain” folds, meaning that should bend “away” from you. This means that you will be embossing on the “white” side of the card.
- Cut out the base/hull piece.
- Flip it over, printed side down on your workbench.
- Take the interior support assembly that you just made and place it on top of the hull piece. If the base does not match up exactly, trim any offending areas on the interior support.
- Glue the interior support to the base/hull piece
- Fold the sides of the hull against the interior support “ribs”.
- Put a SMALL drop of glue on each rib where it touches the hull.
- Begin with the front of the hull and curve the sides to meet at the front of the base. Make sure that the interior support stays between the hull sides. Don’t let it slip “below” them.
- Put a drop of glue at the top of the front of the hull where the two sides meet. This will drip down the seam and secure it.
- Now add more glue to re-enforce the bottom joint.
- Move to the rear of the hull and repeat the same steps by curving the sides as you did before. This will be a bit more “finicky”, as you have a much more rounded curve to create. Just “massage” the hull sides with your fingers and they should curve as needed.
- When you are happy with how things fit, glue the seams as before.
- Back on page 2, cut out the 2 long black ribs and glue them as indicated to the outside of the hull.
- Don’t worry about the last piece on the page for now.



Page 3 is shown at left.

You have a decision to make here. Whether or not you will install the optional CARGO HOLD compartment. I am going to assume that you WILL be installing the cargo hold. If you are not, it will be obvious which steps to eliminate from your assembly.

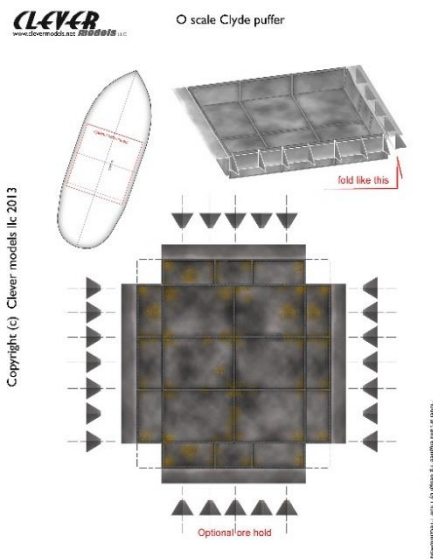
- On page 3, cut out the two large deck shaped pieces.
 - The one on the right is an interior support. Cut out the opening for the cargo hold insert, to the RED line.
- Notice that the two pieces are NOT the same size, but you can align them, one on top of the other. The printed deck will be longer, but where the front begins to curve in will guide you.
- Place the interior support on top of the printed deck, aligning as we just discussed.
 - Transfer the cargo hold opening to the deck and cut it out.
 - Insert the interior support into the hull and push it down until it rests on the interior ribs.
 - Glue it all around its edge.
 - Notice that on the printed deck, that there are two areas where the board direction runs across the boat instead of front to back. These are the vertical areas where the deck “steps up” at the front and back. Emboss a valley and then a mountain fold line for these steps.



Page 4 is shown at the left.

These 2 pieces are the inner face of the hull, above the deck line. Note the profile of the edges facing each other. This is the profile of the deck.

- Fold the deck front and back to match this profile.
- Place the deck into the hull and push it down until it rests on the interior supports.
- Cut out the two pieces on page 4.
- Noting that these pieces fit flush to the hull on its inside, pre-curve the front and back portions of the two hull inner walls.
- Temporarily fit them into the hull. Their bottom edges should closely fit against the deck. You may need to do some minor trimming here. The top of the hull inner walls should be flush with the top edge of the hull and a very close fit to the deck.
- Once you are satisfied with the fit, remove the inner walls and glue the deck in place. Then glue the inner walls in place.



Page 7 is shown at left. (Yes, we jumped ahead a bit.)

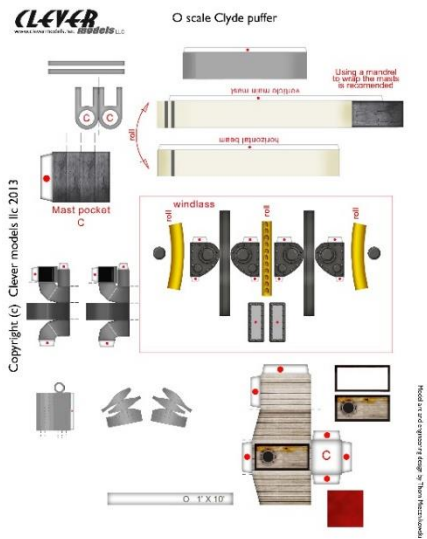
On page 7 is the interior of the cargo hold, although on this boat the cargo was usually in the form of coal or perhaps iron ore.

- Emboss the fold lines indicated by the dashed lines. These are all mountain folds. Also emboss four valley folds where the sides of the hold will fold toward you.
- Cut out all the parts.
- Fold all of the triangular shaped gussets over 180 degrees and glue them individually, back-to-back. Put them aside for just a bit.
- Refer to the **RED** diagram on page 7 and fold the sides up 90 degrees and then the outsides over 180 degrees.
- Glue the corners of the hold to form a box and then glue the outsides flat. This gives you a printed surface both inside and outside but notice that the outside surface is shorter than the inside.
- Place the hold into the opening in the deck and press it down until the outside edge sits on the deck.

- Now that you see how things fit together, pull the hold up a bit, add some glue all around the outside of the hold and press it permanently back into place.
- Using the spacing indicated on the page, edge glue the gussets in place.

Before we go further, we must take a step back. There are some pieces left on page 3 that we can use now.

- On page 3 cut out the remaining 6 pieces. It is fairly obvious where they go.
- Glue the “hashtag” shaped piece on top of its printed duplicate and then the two wooden beams on top of that.
- The other 4 pieces are trim for the top of the hull edge. Glue them in place. They should be centered on the edge with a bit of overhang, inside and outside. The front and back pieces will fold over the steps in the hull.



Page 6 is shown at left.

Let's start with the simplest first, the small shed-like building.

- Emboss the fold lines.
- Cut out the 4 pieces that make up this assembly.
- On the walls piece, cut out the door at the inside edge of the black frame.
- Glue the other door piece that has the black frame around it, BEHIND the opening you just made in the wall.
- Glue the other black frame piece to the outside of the wall over the printed frame. This gives you the 3D look of the door recessed into the wall with a raised frame around it.
- Fold the wall piece into its finished shape and glue.
- Glue the red roof in place.
- Glue the entire assembly to the indicated spot on the deck.

We'll work on the Mast and beam next.

- On page 6 is a grey rectangle shaped piece labeled the "mast pocket". Emboss the fold lines, cut out the piece, fold it into a rectangular tube and glue.
- Glue it to the deck in the indicated spot.
- Cut out the two pieces labeled mast and beam.
- Using a mandrel (like a small diameter dowel) roll these two pieces into tubes. The card will tend to wrinkle being bent to a small radius, but the more you roll it around your mandrel, the smoother it will become. You need to use something like a piece of steel rod, probably about 3/32" in diameter.
- Glue the seams.
- Insert the mast into the mast pocket and glue.
- The strange looking piece just above the mast pocket on the page is the fitting for the end of the beam. Emboss the fold line, cut out the outside edge only, fold it over 180 degrees and glue it flat, back to back.
- Cut out the hole marked C.
- Glue this piece over the end of the beam. It goes on the end without the printed lines and should bisect the diameter. This assembly just slides over the mast.

Below the mast pocket, on the page 2, 90-degree sheet-metal duct elbows. Because they are so small, you may find them a bit difficult to figure out, but this is how they go together.

- Emboss the fold lines. This time, it might be a chore to get them all, as some are not specifically marked, but with a little careful observation, they make sense.
First, there are 4 fold lines marked with dashed lines.
Second, there are three glue tabs that must be folded.
Third, here's the sneaky one, there is a gray area, under the black "duct mouth". That piece needs to fold back, in fact, all these folds are mountain folds. They fold back, away from you.
Cut out the piece.
- Glue the 3 tabs first. This determines the general shape.
- Next glue the gray tab, under the mouth.

- Last, bend the radiused part of the duct around the sides and glue. It not really a radius, but more of a couple of “angle” bends.

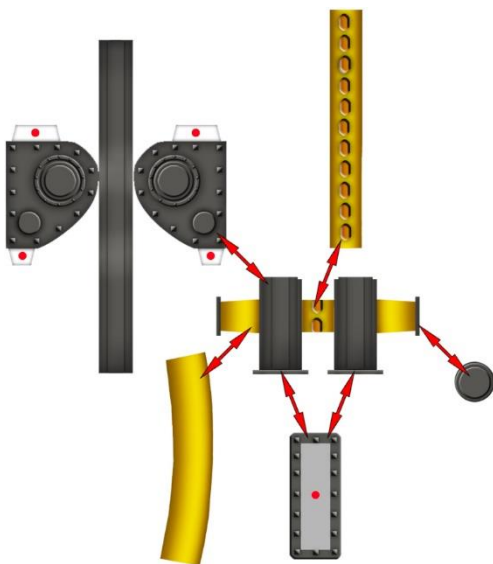


Refer to the picture at left and you will get a good idea of where this duct is typically located. It is also a pretty good view of all the equipment on the deck.

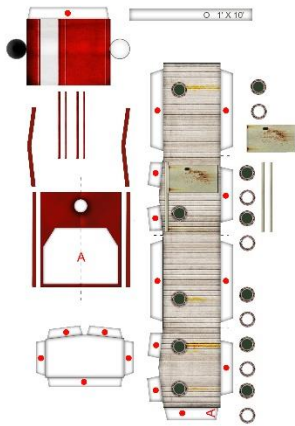
Next, as you look down page 6, below the mast pocket, you will find 3 small grey pieces. This is an exhaust stack that is usually mounted at the rear of the deck. (Honestly, most builders don't bother with it, but here is how it goes together.)

- Cut out the 3 pieces.
- Roll them into very small tubes. The 2 oddly shaped pieces are segmented tubular elbows.
- Glue the pieces into tubes.
- Bend the 2 elbow pieces to form the angles of the elbows.
- Glue the 3 pieces together to form a short stack with a 90-degree bend on one end.
- Glue it to the deck anywhere at the back, you think would be appropriate for an exhaust.

Lastly, we will build the windlass. There are 9 pieces that make up this assembly. Refer to the side view of the assembles windlass at left. The 2 large gray pieces are the main gearboxes. We will build them first.



- Emboss the fold lines for the tabs.
- Cut out all the pieces.
- The long band in the center of the gearboxes, wraps around the sides. You don't need to emboss these folds lines as the connection from the band to the sides will be very fragile and will bend easily. Fold the two sides down and wrap the band around them. Glue them as you wrap.
- The two rectangular pieces with the bolt heads are the windlass bases. Glue one gearbox to each base.
- The long piece that looks like it has slots in it is next. Roll it into a tube slightly smaller than the diameter of the ring on the side of the gearboxes with the bolts around it. Just overlap the joint, no need to trim. Just be sure that it is circular.
- Aligning this piece, which I am calling the “chain sprocket” with the large hub on the side of one of the gearboxes, glue it in place. Be sure the seam faces down so you can't see it.
- Keeping each gearbox base flat on your workbench, glue the chain sprocket to the other gearbox.
- The two remaining yellow pieces are capstans (Technically, they are not as capstans are usually vertical, but these perform the same function.) which will project outward from the gearboxes. Roll them to about the same diameter as the chain sprocket. I little smaller is better. Because of the way the part is printed, when you roll them the finished item will be tapered.
- Glue one to each outside on the gearboxes. The larger diameter faces toward the gearbox.
- Lasty, there are two gray circular hubs. Glue one to outside end of each capstan.



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Next, we will move on to the cabins. This is where we get back to more conventional paper model construction.

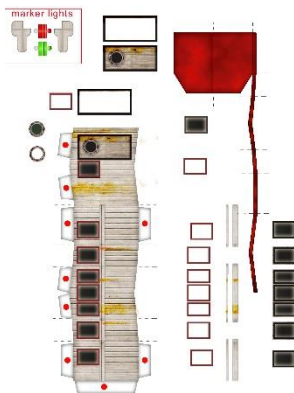
Page 7 is shown at left.

- Emboss the fold lines on the main cabin walls, the interior support and the roof.
- Cut out those three pieces.
- On the cabin walls, cut out the "black" area of the 5 portholes.
- Back on page 7, there are 5 portholes and 5 porthole trim rings. Cut these out. Be careful as these are very small. Try to be as accurate as you can.
- Glue the 5 portholes BEHIND the openings that you cut in the walls.
- Glue the 5 porthole trim rings to the front of the walls.
- Next cut out the door and the two door rails below it on the page.
- Glue the two door rails one on top of the other, to the wall. This

gives it a double thickness. Now glue the door to the wall, below the rail.

- Fold the walls into a rectangular tube and glue.
- Insert the interior support into the walls about a third way up from the bottom and glue it.
- Slightly fold the peak in the roof and glue it to the walls. The front of the cabin has two portholes and the stack goes in front.
- Next, cut out the four pieces of roof fascia and glue them under the edges of the roof.
- The last piece is the smokestack. Cut out the main piece and the four trim rings.
- Use a mandrel to roll the stack until it is the diameter of the ends. Glue its seam.
- Fold over the top and bottom and glue them. Trim the edges flush if needed.
- Roll the four trim bands and glue them to the stack.
- Glue the stack to the roof.

Since the roof is slightly peaked, you may want to trim the bottom of the stack to match or you can cut a hole in the roof and insert the stack. A better solution is if you take the edge of your straightedge and simply press it into the bottom of the stack, you can "dent" the stack bottom enough, so that it sits flush.



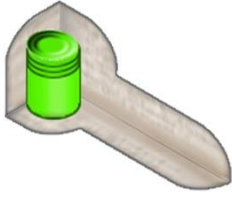
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Now we pilot the pilot house which is found on page 9 shown on the left.

I am going to keep this description brief as you have done all the necessary steps before.

- Emboss the fold lines.
- Cut out the parts.
- Glue the door and window layers, behind the openings that you cut in the walls.
- Glue the frames to the outside of the walls.
- Fold the walls into shape and glue.
- Glue the trim board below the windows.
- Glue the roof to the walls.
- Fold and glue the roof fascia.
- Glue the pilot house to the top of the main cabin.



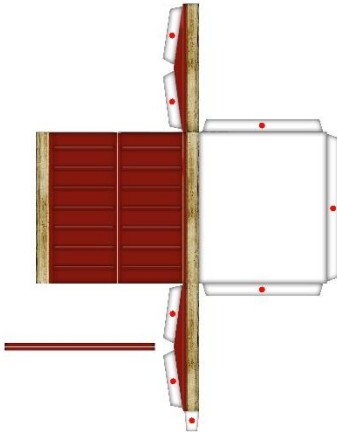
The last item to add to the Pilot house is the two colored marker lights. There is one red and one green. While that can be seen in the photographs, here is a larger view of the green one which goes on the Starboard (right) side.

- Roll the colored lenses and fold over the ends and glue.
- Emboss, cut out, fold and glue the bracket.
- Glue the lenses to the brackets and the brackets to the sides of the pilot house.



O scale Clyde puffer

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The last item to build, might be considered optional. It is the cargo hold cover and is found on page 6 at left.

- Emboss the fold lines.
- Cut out the parts.
- Fold and glue all the tabs.
- Add the trim piece to the peak of the roof.

This piece simply sits on top of the hold.

TA-DA! You're Done!

I strongly suggest that you brush a coat of flat clear on the entire building. (Or spray if you cover the window glazing.)

We hope that you enjoyed this kit and it will inspire you become more creative.

If you need any additional assistance or have any questions, you can always reach us at www.clevermodels.net/contact.

Also, we are always interested in pictures of your completed builds. You can email them to us as attachments and we will post in the blog. Sorry that we can't post everything, but we will try to show off your hard work.

Thank you.
Clever Models LLC