GENERAL INSTRUCTIONS: Print out on either 8.5 x 11 inch or A4 paper. All printout finished images should measure 7.5 inches x 10 inches (190.5 x 254 mm). Pre-crease all of the fold lines of the parts with a blunt tool before cutting them out. Use sharp pointed scissors and a hobby knife to cut out the parts. Cut out only the parts required for each step to avoid losing or damaging them. Follow each step in sequence. TEST FIT EACH PART BEFORE GLUING and use glue sparingly.

The model is designed to be displayed or photographed from the starboard side. All exposed edges of the model are hidden when viewed this way. The model used for filming was more detailed on the starboard side. This model attempts to reflect this; the details are not mirrored to the port side, but are drawn as depicted in available blueprints.

There are 3 pylon “positioners” utilized in the model to precisely align the warp nacelles to the correct angle to the secondary hull. The ends of the pylons are inserted into the positioners to achieve this. One positioner is mounted in the secondary hull, and both warp nacelles contain one positioner.

Approximate Model Dimensions
- Overall Length: 15.24 inches (387.06 mm)
- Overall Height: 3.75 inches (95.25 mm)
- Primary Hull Diameter: 7 inches (177.80 mm)
- Secondary Hull Length: 6.25 inches (158.75 mm)
- Secondary Hull Diameter: 1.375 inches (34.93 mm)
- Warp Nacelle Length: 8.375 inches (212.73 mm)
- Warp Nacelle Diameter: .875 inches (22.23 mm)
SECONDARY HULL REAR SECTION Sub-Assembly

Step 1. WARP NACELLE PYLONS: Form the areas of part 1-P (Port pylon) marked “Roll” around a small diameter dowel. Glue the side edge down onto the long side tab. Fold the end tabs inward towards the center. Repeat with the part 1-S (Starboard pylon). Note that each pylon is marked either “PORT” or “STBD” and the ends are marked “HULL” or “ENGINE” for the assembly. Insert into Note: before cutting out parts 2, 5-P, and 5-S, cut out the white ovals where the pylons will be inserted and make sure that parts 1-S and 1-P will slide easily into the resulting oval cutouts.

Step 2. SECONDARY HULL REAR SECTION: Glue one side edge of part 2 up to the centerline of part 2T. Form part 2 by rolling it into shape around a large diameter dowel. Join the other side edge of part 2 to the centerline of part 2T so that the two bottom side edges of part 2 touch each other with no visible gap. Form part 3 around a medium diameter dowel and glue it into place at the rear of part 2. Refer to the diagram above for correct locations.

Step 3. SHUTTLE BAY SUB-ASSEMBLY: Form part 4. Join the tabs of part 5 to each other to form a quarter sphere and glue to part 4. Form and glue part 6 to parts 4 and 5. Refer to the diagram above for correct placement.

Step 4. WARP NACELLE PYLON POSITIONER SUB-ASSEMBLY: Glue tabs “1” of part 8 to the blue areas marked “1” of part 7. Ensure the corresponding RED lines match up exactly on the two parts. Glue tabs “2” of part 9 to the blue areas marked “2” of part 8. Ensure the corresponding RED lines match up exactly on the two parts. Glue tabs “3” of parts 8 and 9 to the blue areas marked “3” of part 10. Ensure the two corresponding RED lines match up on the three parts. Note that there are indented “notches” on parts 7 and 10 that must be oriented the same direction.

Step 5. ATTACHING THE PYLON POSITIONER AND SHUTTLE BAY: Insert (DO NOT GLUE YET) the Warp Nacelle Pylon Positioner into the Secondary Hull Rear Section, with part 10 (marked “REAR”) going in first. Note that the two notches in the positioner fit over part 2T that runs down the length of the bottom. Part 10 of the positioner will be just at the rear of the oval cutouts of part 2 for insertion of the warp nacelle pylons (parts 1-P and 1-S). Insert (DO NOT GLUE) both pylons into their appropriate oval cutout to properly align the positioner. Refer to the ALIGNMENT ILLUSTRATIONS to the left. Run a small bead of glue around the edges of the positioner front and rear pieces where they touch the inside of the Secondary Hull Section. Remove the Warp Nacelle Pylons to use later in step 21. Glue the Shuttle Bay Sub-Assembly into place at the rear of the Secondary Hull. Refer to the ALIGNMENT ILLUSTRATIONS to the left for the proper placement and notes A and B. Note A: Fold down the two tabs on the side projections. Note B: Fold inward and glue together the side projections. Glue the tabs of the tabs under the Shuttle Bay Sub-Assembly. The edge of the tabs should be even with the front fold of the Shuttle Bay Sub-Assembly.

Step 6. ATTACHING THE FANTAIL: Form part 11 into a semi-circle and glue it under the Shuttle Bay Sub-Assembly where indicated it the diagram above. Fold down the triangle tabs of the Secondary Hull fantail opening. Form part 12 to conform to the shape of the fantail opening and glue it into place.

COMPLETED SECONDARY HULL REAR SECTION Sub-Assembly
(Viewed from the bottom)
ASSEMBLY MANUAL - PAGE 2 OF 7
USS ENTERPRISE NCC-1701
1:720 Scale model design by Ron Caudillo (ronaldcaudillo@yahoo.com)
Special thanks to Alan Sinclair for providing working drawings (wizardofflight@hotmail.com)

PRIMARY HULL UPPER SECTION Sub-Assembly

Step 7. BRIDGE SUB-ASSEMBLY: The general arrangement of parts is shown in the illustration above, however, order of assembly is different. Locate all seams to the rear. Form and glue part 13 to form a cone shape. Glue part 14 to the top of part 13. Form and glue part 15 to form a cone shape. Glue part 16 to the top of part 15. Glue the bottom of part 13 to the top of part 16. Form and glue part 17 to form a cone shape. Glue the bottom edge of part 15 to the top edge of part 17, aligning the white areas. Form part 18 by rolling into shape where indicated on the part. Join the rear edges of part 18 over part 18T. Glue part 19 up into the top of part 18. Glue the bottom of part 17 to part 19, aligning the white areas. Form part 20 into shape by rolling where indicated on the part. Join the rear edges of part 18 over part 20T. Glue the bottom of part 18 to the top of part 20. Roll part 21 into a cylinder and glue part 22 to the top of it. Glue the bottom edges of part 21 to the white areas on the rear of parts 15, 17, and 19.

Step 8. ASSEMBLING THE UPPER SECTION SUB-ASSEMBLY: Line up the details and grid lines of each piece. Form and glue part 23 into a cone shape and glue part 23T inside to join the side edges. Glue part 24 up into part 23. Glue the tabs of part 23 up into the part 25, aligning the white areas together.

Completed PRIMARY HULL UPPER SECTION Sub-Assembly

PRIMARY HULL LOWER SECTION Sub-Assembly

Step 9. SENSOR DOME AND INNER SECTION: Locate seams to the rear and line up grid lines and details. Form and glue part 27 into a ring. Glue part 26 to one set of tabs of part 27. Form part 29 into a cone shape and glue to the white area of part 28. Form part 30 into a cone shape and glue part 30T inside to join the side edges. Note that part 30T should be located on the inside in the area indicated by the dotted blue lines and will not join together the white area of part 30. Glue part 31 up into part 30. Glue the remaining tabs of part 30 up into part 32 and the remaining tabs of part 27 onto part 31, aligning the white areas together.

Step 10. MIDDLE AND OUTER SECTIONS: Locate seams to the rear and line up details and grid lines. Form part 33 into a cone shape and glue to the inner tabs of part 34, aligning the white areas. Glue the outside edge of part 32 (sub-assembly from step 9) to the inner tabs of part 33, aligning the white areas together.

Step 11. OUTER EDGE ASSEMBLY: Locate seams to the rear and line up grid lines. Form parts 35 and 36 into a large ring shape and glue part 35T inside to join the side edges. Glue part 36T onto part 35 only for now. Glue the remaining tabs of part 34 (sub-assembly from step 10) to parts 35 and 36, beginning at the joint between parts 35 and 36. Align this joint with the front of part 34, aligning the grid lines. Note that the 3 white dots at the front joint of parts 35 and 36 will be to the front of the saucer. Alternating between parts 35 and 36, glue 1 inch sections at a time until you reach the rear. Finish gluing part 36 (with part 36T attached) to the tabs of part 34. Join the remainder of part 35 to part 34, joining at part 36T.
Step 12. INNER SUPPORT RINGS: Note: These steps involve working on the inside of the lower saucer sub-assembly. Orient the "CUT OUT" areas to the rear of the lower saucer sub-assembly. Form and glue part 37 into a cone shape. Glue the smaller end onto the flat inner circle just inside the tabs as shown in the illustration above. Glue parts 38 and 39 together to form a ring and glue them just inside the tabs of part 33 (identified in step 12) as shown above. Glue parts 40 and 41 together to form a ring and glue them just outside of the tabs of part 34 (identified in step 12). Allow this to dry completely before proceeding. Cut out the areas marked "CUT OUT" in parts 39 and 41 shown as RED lines in the illustration above. Flip the entire sub-assembly over. Cut out the white semi-circular area of part 30 (identified in step 9). Cut along the centerline of the white area shown as RED lines in the illustration above. Fold the tabs created by this centerline cutting inwards along the lines shown in GREEN in the illustration above. These new tabs will help position the dorsal pylon and provide a joining surface for attaching it.

Step 13. JOIN UPPER AND LOWER SUB-ASSEMBLIES: Fold the middle support top ring tabs IN. Fold all other top tabs OUT. Apply glue to the top tabs of the inner and middle support rings only. Quickly and accurately align the upper and lower sub-assemblies so that the appropriate grid lines line up on both of them. Apply light, even pressure to the glue joints for a few minutes before proceeding. Very little, if any, warpage will occur if the glue is allowed to dry under slight pressure. Working from the front to back and alternating between port and starboard sides, apply glue to about a 2 inch section of the outer support ring top tabs and the top tabs of parts 35 and 36 (identified in step 11) to join to the upper sub-assembly to the lower one. Work slowly and be sure that the joined outside edges match up exactly before continuing to the next 2 inch section.

Step 14. ATTACH IMPULSE ENGINE: Note that there are no white areas on the primary hull sub-assembly to show the exact placement of part 42 and 43. This is to allow for better alignment of these parts despite minor assembly misalignment of the upper and lower sub-assemblies. Refer to the illustrations above for placement locations. Form part 42 by gluing the top and sides together. Glue this down onto the top of the upper surface shown by the blue line in the illustration above. Form part 43 by rolling the 2 sides into a tapered shape and gluing the top to the bottom on either side. Glue this onto the rear of the primary hull just under part 42 and centered on the pylon insertion cutout on the underside. Apply slight downward pressure to part 42 to ensure a flat joint to the top of the hull. Allow this to dry completely before proceeding.

COMPLETED PRIMARY HULL Sub-Assembly
ASSEMBLING AND ATTACHING
THE DORSAL PYLON Sub-Assembly

Step 15: DORSAL PYLON SUB-ASSEMBLY: Form and glue part 44 together. Form part 45 by rolling the area indicated in the above illustration around a small diameter dowel and pre-creasing the fold lines. Glue part 44 to one side of part 45 as shown above. Note A - Join the rear edges of part 45 together and let set for a few minutes. Note B - Apply glue to the inside surface of part 45 that is not glued to part 44. Glue the base tabs of part 45 to part 46 in the area indicated by the blue lines in the illustration above. Fold down the top tabs.

Step 16: ATTACHING THE DORSAL PYLON TO THE PRIMARY HULL: Test fit the dorsal pylon sub-assembly (from step 15) into the primary hull sub-assembly cutout. When properly assembled, the top of the dorsal pylon should touch the bottom of the flat surface directly under part 42 (identified in step 14). The bottom surfaces of the primary hull cutout should conform to the bottom of the white area on the top sides of the dorsal pylon, completely concealing the white areas. This is identified by a blue line in the illustration to the left. There should be no deformation of the sides of the primary hull cutout. The front of the dorsal pylon should fit snugly into the cut of the semi-circular curve at the front of the cutout. The rear top of the dorsal pylon should just touch the bottom edge of the primary hull rear just below the impulse engine. Apply glue to the top of the dorsal pylon and to the tabs on the sides of the cutout in the lower primary hull surface. In one smooth, quick motion, insert the dorsal pylon up and forward into the cutout to its proper position. Ensure the dorsal pylon is perpendicular to the flat top surface of the primary hull (see the alignment diagrams). Apply slight pressure to hold the dorsal pylon in place. Allow this sub-assembly to completely dry before proceeding to the next step.

Step 17: ATTACHING THE PRIMARY HULL/DORSAL PYLON TO THE REAR OF THE SECTION OF THE SECONDARY HULL: Fold down the top tabs in the secondary hull rear sub-assembly to accommodate the dorsal pylon. Fold forward the tabs on the dorsal pylon part 46 (identified in step 15). Test fit the primary hull/dorsal pylon sub-assembly into the secondary hull and check for proper alignment. When properly aligned, the front-to-back flat top surface of the primary hull should be parallel with the longitudinal centerline of the secondary hull. You can use the center red stripe side detail on the secondary hull as a reference (see alignment illustrations). Apply glue to one of the upper secondary hull tabs and join it to the side of the dorsal pylon just at the top of the white area on the side. This is identified by the blue line in the illustration to the left. Clamp together and allow it to dry before proceeding. Apply glue to the other top tab and repeat the procedure. Let this dry completely before proceeding. Align the bottom wide tab of the dorsal pylon part 46 directly on the center of part 27 (identified in step 2). Mark the position of the forward edge of this wide tab of part 46 on the inside of the secondary hull. Apply glue to join the bottom wide tab of part 46 to the inside bottom of the secondary hull, ensuring the tab is at the alignment mark. Clamp together and allow this to dry completely before proceeding. Apply glue to the remaining triangular tabs of part 46 and join them to the inside of the secondary hull.
ASSEMBLING AND ATTACHING THE SECONDARY HULL FORWARD SECTION Sub-Assembly

**Step 18** SECONDARY HULL FORWARD SECTION AND SENSOR RINGS ASSEMBLY: Form and glue part 47 into a cone shape. Be sure to cut out the small white circle in the center of part 46. Glue part 46 from behind into place.

Roll part 49 into a cylinder and join with part 49T-1 glued to the inside as shown in the illustration to the left. Glue the tabs of part 48 into part 49, orientating the seam down into the middle projection.

Form and glue part 50 into a cone shape. Glue into place on the front of part 48, orientating the seam down. Glue the tabs of the 3 projections onto part 50. The diagram on the left shows where these projections will attach to part 50.

Glue part 51 into place on to the front of part 48 just inside of part 50. This part is a trim ring only and is used to hide the tabs of part 50.

Form and glue part 52 into a ring and glue into place on the front of part 48 and just inside of part 51, orientating the seam down and exposed edge to the port side.

Form and glue in turn, parts 53, 54, and 55 into rings and into place on the white rings of part 48, orientating the seams down and exposed side edges to the port side. Form part 55 around a toothpick to achieve the proper diameter. Ensure the center hole of part 48 is clear of glue.

Form and glue part 56 into a cone shape. Be sure to cut out the small white circle in the center of part 57. Glue part 57 to the back of part 56. Cut a round toothpick (yes, I know it’s cheating!) to the length shown below (the drawing of it is full size). When the glue between parts 56 and 57 is dry, glue the toothpick into part 57 to the mark shown in the toothpick diagram and allow it to dry for a bit. Paint the toothpick silver. Apply a drop of glue into part 55 and insert the toothpick through it and through the center hole in part 48. There should be approximately 1/16" (1.587 mm) space between the front of part 55 and the rear of part 57. Apply a small drop of glue to the back of part 48 where the toothpick poking through. Let this assembly dry completely before proceeding to the next step. Ensure the toothpick is straight and parallel to the sides of part 49.

**Step 19** ATTACHING THE FORWARD SECTION SUB-ASSEMBLY TO THE SECONDARY HULL: Glue part 49T-2 up inside part 49 with the triangle tabs pointing back. Let this sub-assembly dry completely before proceeding.

Be sure all parts are dry before proceeding. Test fit the forward section sub-assembly to the front of the secondary hull rear assembly. When properly fitted, there will be no gap between the 2 sub-assemblies. The forward edge of the dorsal pylon will fit snugly into the cutout on the top of the forward section sub-assembly with no deformation of the cutout. The white area on the dorsal pylon will be completely covered by the forward sub-assembly. All of the details will match up between the sub-assemblies. Note that the bottom seams will be offset from each other. Apply glue to the triangular tabs of part 49T-2 and the top tabs of the froward sub-assembly. Join the forward section sub-assembly into place and lightly hold together, keeping the detail lines matched up and the sub-assembly edges together. Continue holding together until the glue is completely dry.

COMPLETED PRIMARY AND SECONDARY HULL Sub-Assembly
WARP NACELLE Sub-Assembly

(Port Nacelle shown, repeat for the Starboard Nacelle)

Step 20. WARP NACELLE BODY: Glue the side edge of part 58-P (with the oval cutout) up to the centerline of part 58T-P. The rectangular cutout of part 58T-P will align with the oval cutout of part 58-P. Let this dry for a few minutes and then form part 58-P by rolling it around a medium diameter dowel. Glue the other side of 58-P over part 58T-P so that the two side edges meet with no visible gap between them.

Step 21. WARP NACELLE PYLON POSITIONER ASSEMBLY AND INSTALLATION: Glue tabs “1” of part 59-P to the blue areas marked “1” of part 60-P. Ensure the corresponding RED lines match up exactly on the two parts. Glue tabs “2” of part 61-P to the areas marked “2” onto the blue area marked “2” of parts 59-P and 60-P. Glue tabs “3” of part 62-P to the blue areas marked “3” of parts 59-P and 61-P. Let this assembly dry completely. Insert the positioner (DO NOT GLUE YET) into the warp engine nacelle with part 62-P (marked "REAR") going in first. Note that the two notches in the positioner fit over part 58T-P that runs down the length of the bottom. Part 62-P of the positioner will be just at the rear of the oval cutout for the warp nacelle pylons (part 58-P). Insert (DO NOT GLUE) part 1-P (identified in step 1) into the oval cutout to properly align the positioner (see the ALIGNMENT ILLUSTRATIONS). Run a small bead of glue around the edges of the positioner front and rear pieces where they touch the inside of the warp nacelle pylons. Remove the warp nacelle pylons.

Step 22. WARP NACELLE FORWARD END SUB-ASSEMBLY: Be sure to orient all seams to the same side. Form and glue part 63-P into a ring. Form and glue part 64-P into a cone and glue to one tabbed end of part 63-P. Form and glue part 65-P into a cone shape and glue to the other tabbed end of part 63-P. Form and glue part 66-P into a ring and join the edge tabs if the "spikes" together to form a half-sphere. Note that every other spike will lay on top of its adjacent spike for easier assembly. Smear a thin layer of glue inside of part 66-P when finished. This will give it more strength and help hold its shape. Glue part 66-P to part 65-P so that the rear edge of 66-P completely covers the white area of 65-P and the seams of both parts line up. Note that the 3 "strap" details of each part will also line up.

Form part 67-P into a cone shape and glue to the area of part 64-P just inside of the black area of part 64-P as shown in the illustration above. Part 67-P acts as a spacer between the cone shapes and enhance the over-all appearance. Offset the joint of part 67-P from the joint of the cone shapes. Form and glue part 68-P over part 67-P with the seam lined up with the seam of part 63-P. Note that part 68-P does not have a tab and the seam edges will form a butt joint. Continue to assemble, alternating with the other 2 parts 67-P and part 68-P. Finish the assembly by forming and gluing part 69-P on the end with its seam oriented the same way as parts 63-P, 66-P, and 65-P.

Step 23. WARP NACELLE DETAILS ASSEMBLY AND ATTACHMENT: Form and glue part 72-P together (there are 2 of them). Glue them to the sides of the warp nacelle at the rear as shown in the diagram above. Form and glue part 73-P together (there are 2 of them). Glue them to the top of the warp nacelle at the rear as shown in the diagram above. Fold part 74-P in half and glue it together (there are 2 of them). Glue it to the front of part 73-P so that it touches the warp nacelle also (see the diagram above for correct orientation). Form and glue part 75-P together and glue it to the inboard side of the warp nacelle as shown in the diagram. Fold and glue part 76-P together and glue it to the front of part 75-P so that it touches the warp nacelle as shown in the diagram. Fold part 70-P into a ring and glue it just inside the front of the warp nacelle and flush with the front end. Orient the angled ends down to fit around the joining tab (part 58T-P). Form part 71-P into a ring and glue it over part 70-P so the end of it is flush with the front end also. Orient the seam where the 2 ends meet towards the top. Glue the warp nacelle forward end sub-assembly (from step 22) to the front of the warp nacelle, orienting the seams down.
ASSEMBLY MANUAL - PAGE 7 OF 7
USS ENTERPRISE NCC-1701
1:72.0 Scale model design by Ron Caudillo (ronaldcaudillo@yahoo.com)
Special thanks to Alan Sinclair for providing working drawings (wizardofflight@hotmail.com)

Step 24. FINAL WARP NACELLE ASSEMBLY: Form and glue together parts 76-P (there are 3 of them). Glue to the underside of the front of the warp nacelle (see the illustration to the left for proper orientation and location). Note that there are 3 white areas on the body section but no corresponding white areas on part 76-P of the front sub-assembly where the front of part 76-P attach. Preform into shape part 77-P (see the side view illustration to the left) and glue into place on the aft end of the warp nacelle. Note that the narrower end of part 77-P will be oriented up. Apply glue to the end of the warp nacelle pylon (part 1-P) and the top of the positioner inside of the oval cutout in the warp nacelle body. Insert the pylon into the body until it stops. When viewed from the side, the pylon should be perpendicular to the body centerline. See the illustration for reference.

COMPLETED PRIMARY HULL UPPER SECTION Sub-Assembly

Repeat steps 20 - 24 for the STARBOARD WARP NACELLE.
The starboard warp nacelle parts will have an “S” instead of the “P” suffix on their part numbers.

FINAL ASSEMBLY
Installing and aligning the Warp Nacelles

Step 25. INSTALL WARP NACELLE SUB ASSEMBLIES: Form and glue part 80 into a cone shape. Glue part 81 to the top of it. Glue the bottom of part 80 to the upper rear of the secondary hull on the white circle. Apply glue to the ends of the warp nacelle pylons and also to the upper inside surface of the positioner in the secondary hull. Insert the lower end of the pylon into the secondary hull until it stops. View the model from the front, top and both sides to ensure correct alignment of the warp nacelles with respect to the secondary hull and saucer. Refer to the alignment illustrations on the cover page. When viewed from the side, the centerline of the warp nacelles should be parallel to the centerline of the secondary hull and the top of the saucer. When viewed from the front, the front ends of the warp nacelles should be symmetrical to each other on either side of the saucer bridge. You can adjust the position of the warp nacelles a little bit to achieve proper alignment and symmetry.

Step 26. ALIGNMENT OF WARP NACELLES: Turn the model upside down on a flat surface to dry. While in this position, you can make final adjustments to the model. There should be 4-1/2 inches (114.3 mm) between the warp nacelle centerlines at both the front and rear. If a 5/16 inch (7.93 mm) block is placed at the aft end of each warp nacelle, the model should touch the flat surface at the top of the saucer bridge and the front of each warp nacelle. The rear of each warp nacelle will be resting on top of the 5/16 inch (7.93 mm) block. See the above illustration. Allow the model to dry completely before handling. Refer to the illustrations on the cover for proper alignment of the warp nacelles. If you suspend the model from the impulse engine top (part 42 of step 14 about ½ inch (6.35 mm) from the rear, the model should balance. Spray the completed model with a few LIGHT coats of a clear matte or semi-gloss finish to protect the printed surfaces from humidity and dirt.