

Background: 33 inch Model of the Starship Enterprise



Introduction

The USS Enterprise from the 1960's TV series Star Trek has become an icon of our culture. The 11 foot long miniature that most often represented the Enterprise on the screen has been part of the Smithsonian's Air and Space Museum collection since 1974. What many people are often surprised to find out is that that miniature was the second model of the Enterprise to be made, and followed a smaller 33 inch (often referred to as 3 foot) miniature made about a month earlier.

The first time that I became aware of the smaller miniature was in reading Stephen Whitfield's book, *The Making of Star Trek* (ISBN 0345340191). Over time I started noticing that images of the Enterprise I had assumed to be the 11 foot model were actually the 33 inch model. And that one of my favorite representations of the Enterprise (as a model on a table in the episode *Requiem for Methuselah*) was also the 33 inch model.

The odd thing about the miniatures of the Enterprise is that for many years fans didn't have an accurate set of plans for the models. We had Walter (Matt) Jefferies' drawings from *The Making of Star Trek*, we had Franz Joseph's beautiful set of

drawings in the *Star Trek Blueprints* (ISBN 0345258215), and Allen Everheart's drawings based on his observations of the 11 foot model on display (and eventually used by AMT/ERTL to make a model kit of the Enterprise). It wasn't until relatively recently that accurate plans became publicly available, and those were always aimed at representing the 11 foot model.

For many, the fact that the 33 inch model had gotten lost in the 1970's and that all that remained were photos of the model meant that no accurate plans would be possible. Back in 2007, after taking a close look at the available data, I thought it sounded like an interesting challenge.

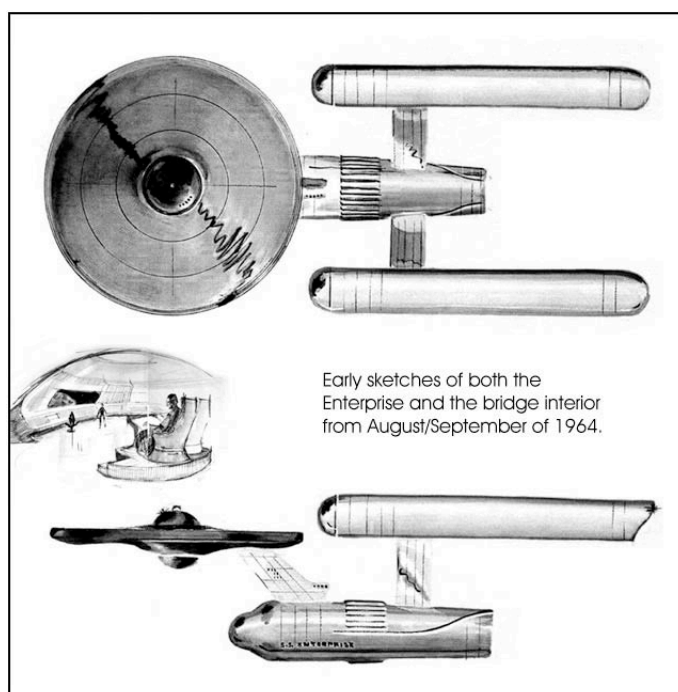
History

The history of the 33 inch model wasn't something that I was originally interested in. I was looking to document surface details of the model and record those in drawings that could then be used to make a reasonably accurate replica of the original. What I found was that in looking at the available photos of the original, it changed over time... and that documenting details of the model would also mean documenting details of the models history.

What follows is a timeline of events that I've put together while researching the physical details of the 33 inch model. Some of these events are anecdotal, and this timeline is by no means definitive... it is shared for the reader's enjoyment.

August 1964: A final overall configuration was picked, a color illustration was done and a study model was made by Matt Jefferies. The next few months would be spent working out the details of the ship. Here is his accounting of events.

Matt Jefferies: *"By the third time around he had two sheets of eight or ten drawings, plus a half dozen good-size renderings. One of them was the beginning of the design finally chosen and one that I liked very much... an upper, saucer-shaped hull, a cigar-shaped lower hull, and two engine pods. Before calling everyone in again, I did a little fast model building. I went down to the mill [woodworking shop], grabbed a couple of*



chunks of wood, and had the men turn out the saucer shape on a lathe. In about thirty-five to forty minutes I had a model. We hung it up on a piece of thread and called everyone in. Oddly enough, the original model was hung upside down as opposed to the way we use it now."

"Based on that model and the color renderings I had prepared for it, Roddenberry felt we were on the right track. We wound up shortening the main pylon strut and made a few other little changes and then sat down to some scale drawings."

- Nov. 4, 1964 (Wednesday):** Richard Datin agrees to build an approximate three foot long model based on an early set of plans which give a real world scale of 1:192 (if this had been the final drawings, this would have been the 540' version, but the proportions of this early drawing are actually different from the final plans) for the final large scale model (which would have most likely been 1:48).
- Nov. 7, 1964 (Saturday):** The final construction plans are finished. These plans include the scale reference of FULL SIZE & 3" = 1'-0" TO LARGE MINIATURE. As the one feature linking the scale of the model to the live action sets is the bridge, the overall size seems to have already been determined by this point. In fact because Jefferies didn't want windows or the like on the surface of the ship, the bridge was the primary feature that would be used to sell the size of the ship in the pilot.
- Nov. 8, 1964 (Sunday):** Datin receives the plans and starts building the full size 33 inch model out of kiln-dried sugar pine. This date needs to be double checked with Datin. The drawings are labeled November 7th and I'm assuming he got the drawings within 24 hours of their completion.
- Nov. 15, 1964 (Sunday):** A little more than a week later the 33 inch model is presented to Roddenberry for approval. I'd guess this is where the request for the addition of exterior windows takes place (which were not part of the original design). The windows seen on the few elements of the original drawings were added after the original completion date of them. My understanding is that Roddenberry was constantly asking for more details.
- Nov. 27, 1964:** Live action shooting is scheduled for the Transporter Room, Enterprise Passageway and Pike's Quarters.
- Nov. 30, 1964:** Live action shooting is scheduled for the Bridge (which means construction of it might have been started by around the 15th). This day's schedule includes the crane shot of the bridge that will eventually be composited with the (as yet) unstated 11 foot model.
- Dec. 1, 1964:** Live action shooting is scheduled for the Bridge and Orion Courtyard.
- Dec. 8, 1964 (Tuesday):** Construction is started on the 11 foot model.
- Dec. 14, 1964 (Monday):** The 33 inch model is delivered to Roddenberry while The Cage was being filmed in Culver City (40Acres). This model is used for all effects shots in The Cage except the most important one (the zoom in on the bridge). Images of the model being delivered seem to be on the Rigel

Fortress set, but filming was originally scheduled for December 8th for those shots. Either this date should actually be the 8th or the shooting schedule met with delays. December of 1964 was rainier than normal for most parts of California, so the Rigel Fortress shots might have been delayed.

Dec. 24, 1964 (Thursday): Shooting of The Cage wraps, only one effects shot still outstanding.

Dec. 29, 1964 (Tuesday): The 11 foot model (built by Datin, Mel Keys and Vern Sion) was delivered to the Howard A. Anderson studio. This version is unpowered and the windows are painted on the surface of the model... and even then the model was designed to be shot from the right side only.

Jan. 23, 1965 (Saturday): After The Cage is already in the can and waiting for network approval of the new series, additional test shots of the 11 foot model are taken.

August-September 1965: The 11 foot model is modified to include inner lighting and more surface detail. It doesn't appear that the 33 inch model was modified at this time, but the only noticeable detail that would have been different between them was the rear of the nacelles, and the only new shot of the 33 inch model in Where No Man Has Gone Before was of it exiting the energy barrier.

April 1966: The 11 foot model is further altered for the now approved new series. Some of the previous changes needed to be undone... the bridge had two large windows cut into it and to remove them the bridge was cut in two along the top edge of one of the windows. The top half was returned to the model and the bottom half discarded. The 33 inch model was also modified around this time to match the 11 foot model.

Between the Second and Third Season of Star Trek: The 33 inch model is damaged, most likely from a fall. Some repairs are made (poorly) and the hangar doors are lost.

End of Star Trek (1969): 33 inch model is put in storage.

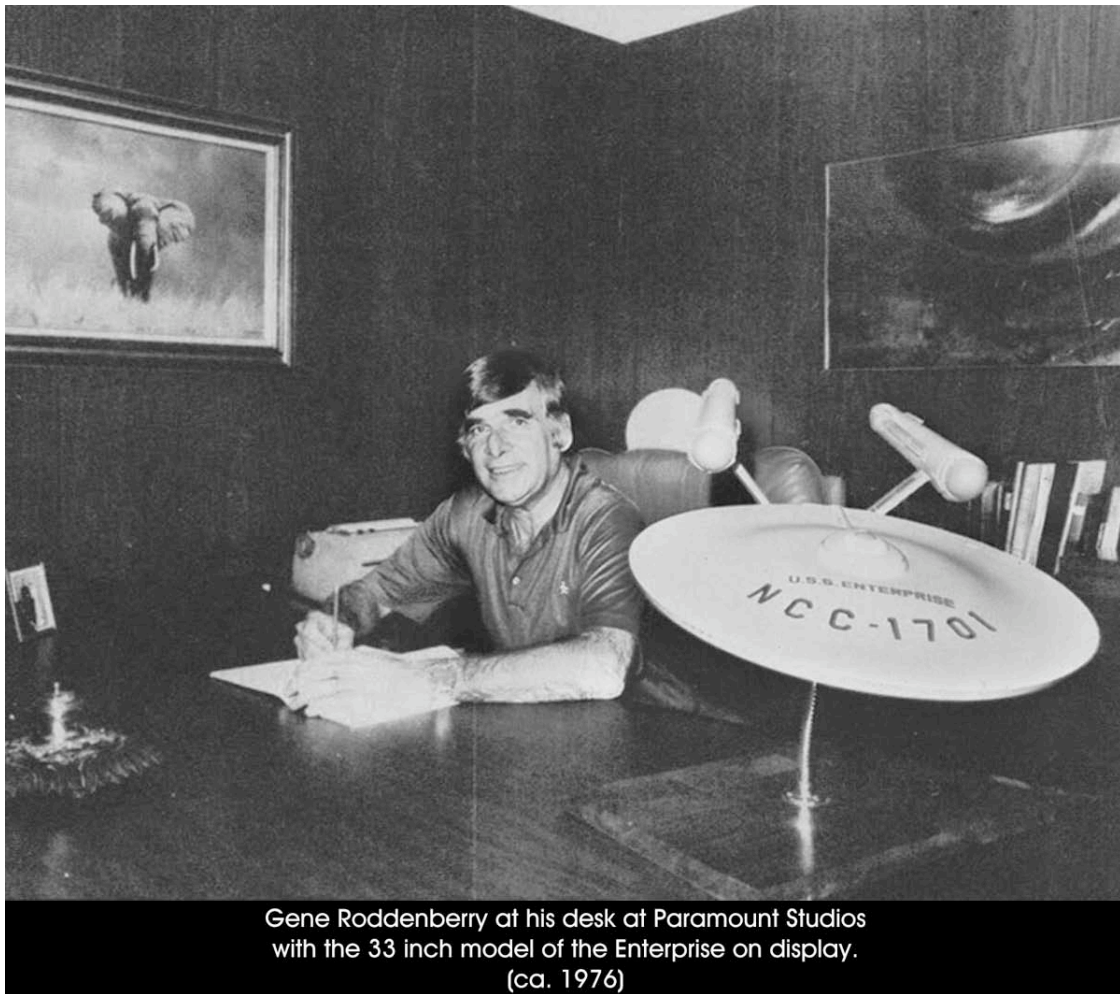
Early 1975: Roddenberry returns to Paramount to start development of Star Trek



Richard Datin holds the 33 inch model of the Enterprise up for Gene Roddenberry to inspect.
(Culver City, December 14, 1964)



Jeffrey Hunter holds the 33 inch model of the Enterprise as Gene Roddenberry inspects it.
(Culver City, December 14, 1964)



Phase II. He is given the 33 inch model at this time.

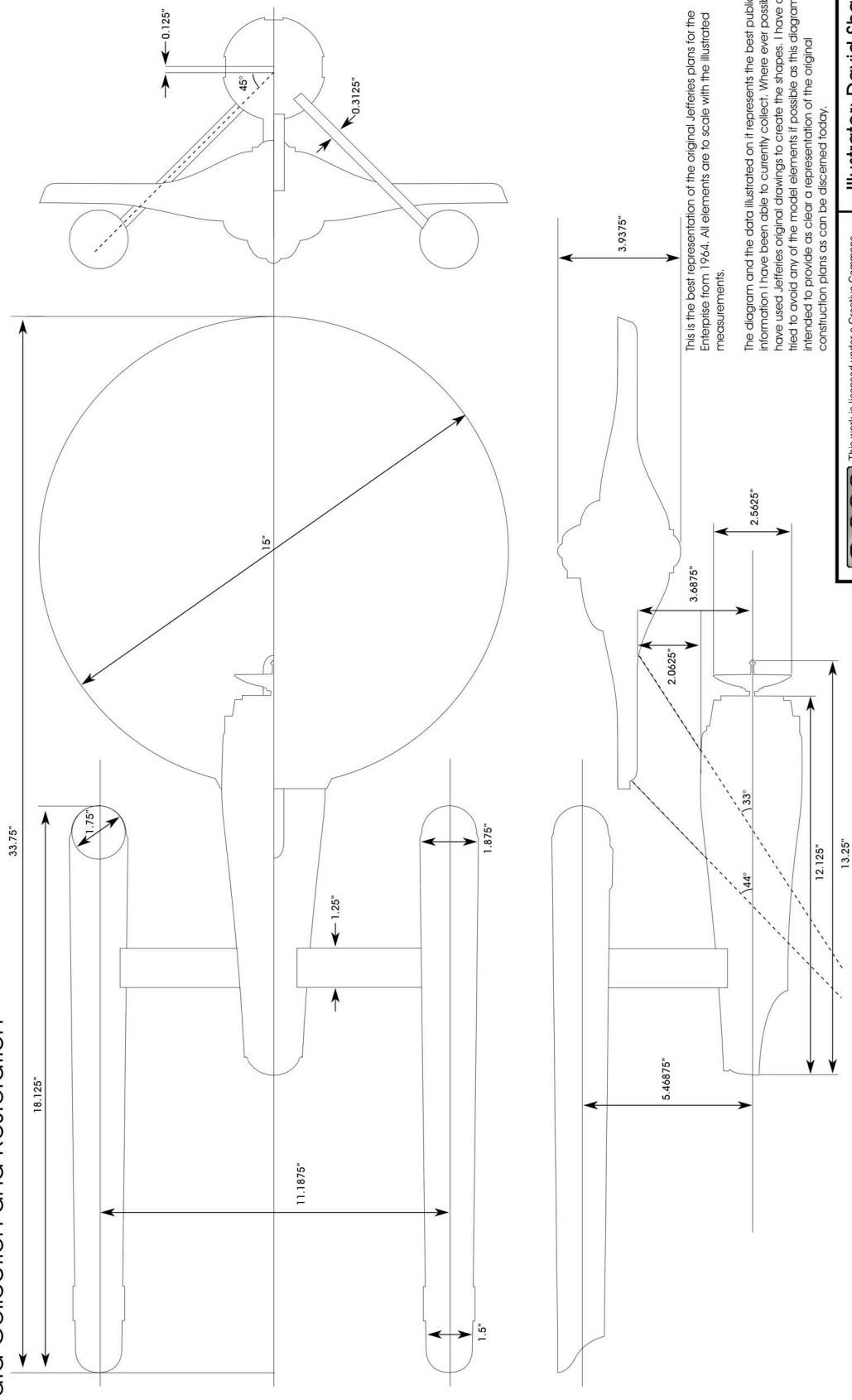
1978: Roddenberry loans the 33 inch model to one of the effects houses working on Star Trek (either Brick Price's WonderWorks or Magicam, I'm not sure which at this point), and it is never returned.

Reference Data

As pointed out, one of the early stumbling blocks in studying the 33 inch model was a lack of data. With the model gone, another source of measurements was needed to make use of the available photos of the model. As it turned out, such a source became available when a series of measurements from Jefferies' original plans were made public. The measurements were reportedly from Datin, and in addition to the few small elements of the plans that were available, I reverse engineered the set of drawings that follow.

1964 JEFFERIES CONSTRUCTION PLANS

Data Collection and Restoration



This is the best representation of the original Jefferies plans for the Enterprise from 1964. All elements are to scale with the illustrated measurements.

The diagram and the data illustrated on it represents the best public information I have been able to currently collect. Where ever possible I have used Jefferies original drawings to create the shapes. I have also tried to avoid any of the model elements if possible as this diagram is intended to provide as clear a representation of the original construction plans as can be discerned today.

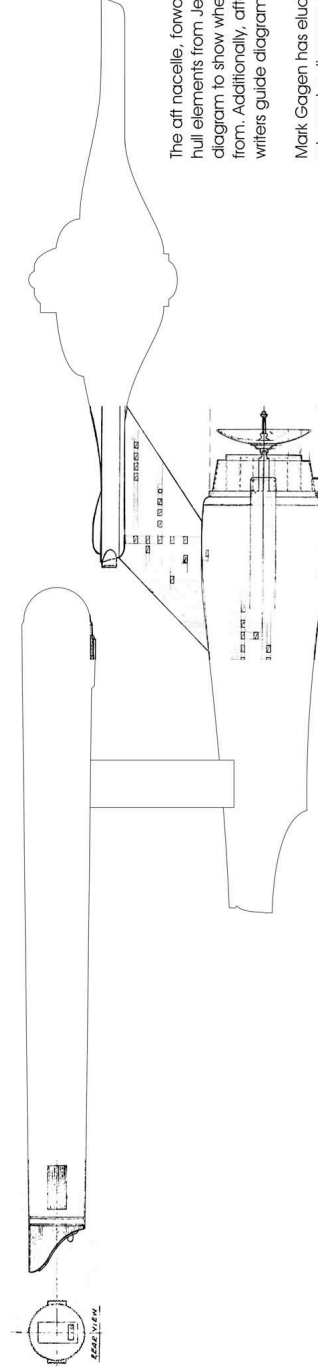
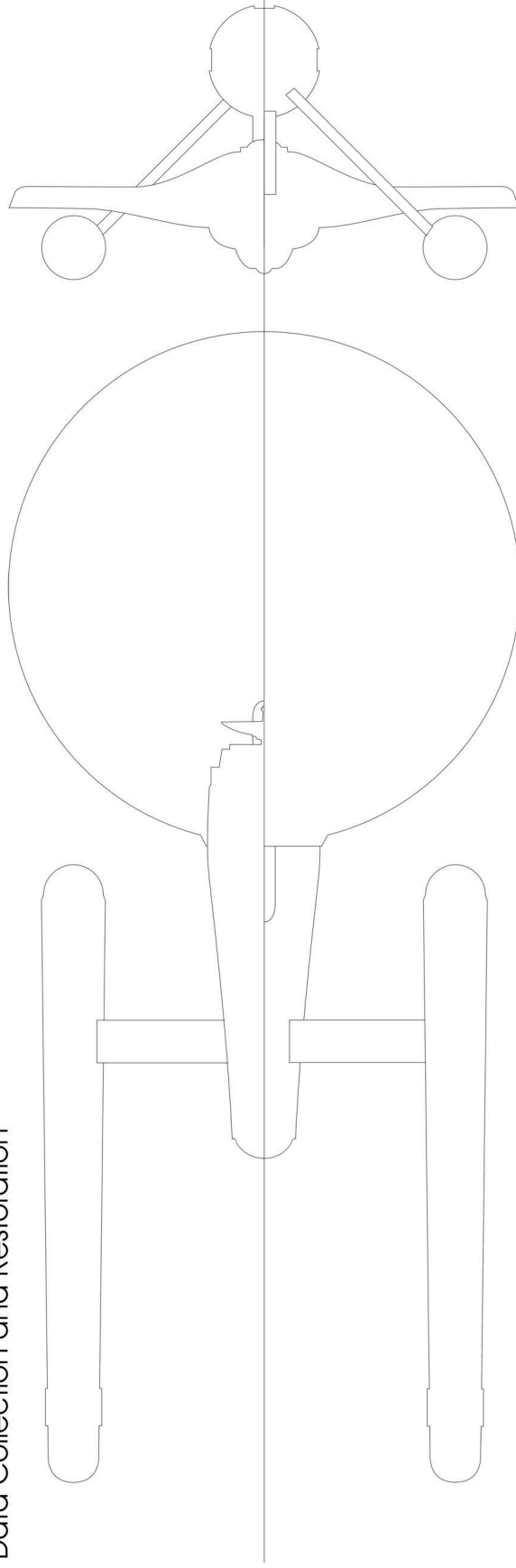


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Illustrator: David Shaw
Date: October 2007

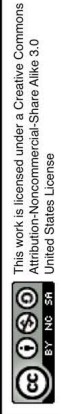
1964 JEFFERIES CONSTRUCTION PLANS

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The aft nacelle, forward secondary hull, dorsal support and aft primary hull elements from Jefferies original drawing are overlaid on the diagram to show where many of the curve elements were derived from. Additionally, after correcting for distortions, I also made use of the writers guide diagram of the Enterprise.

Mark Gagen has eluded to having copies of the original plans and released a diagram of the bridge based on them (while not providing any actual images of the original drawing itself). As I have no reason to believe his diagram is flawed, I have based the size and shape of the bridge on this set of diagrams on what he provided.



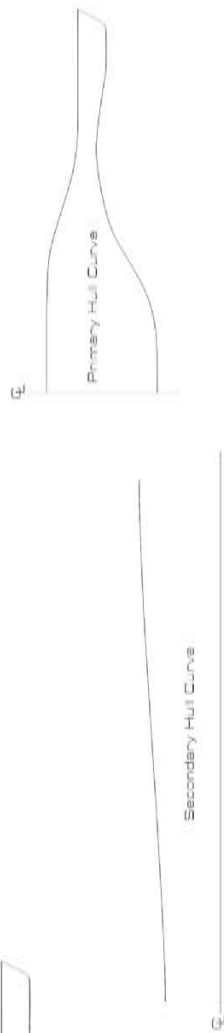
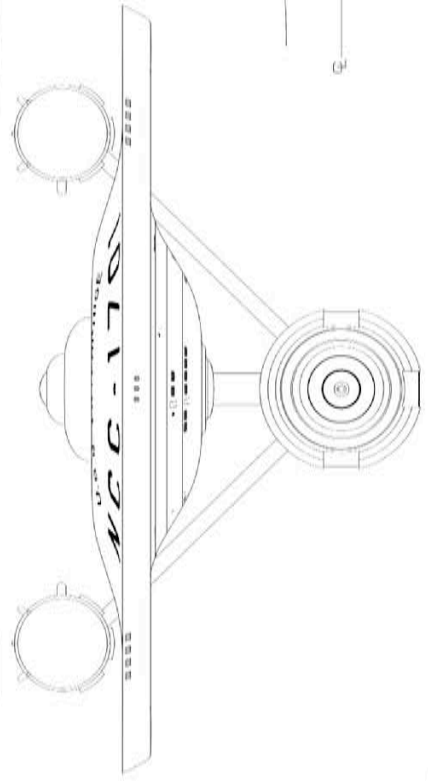
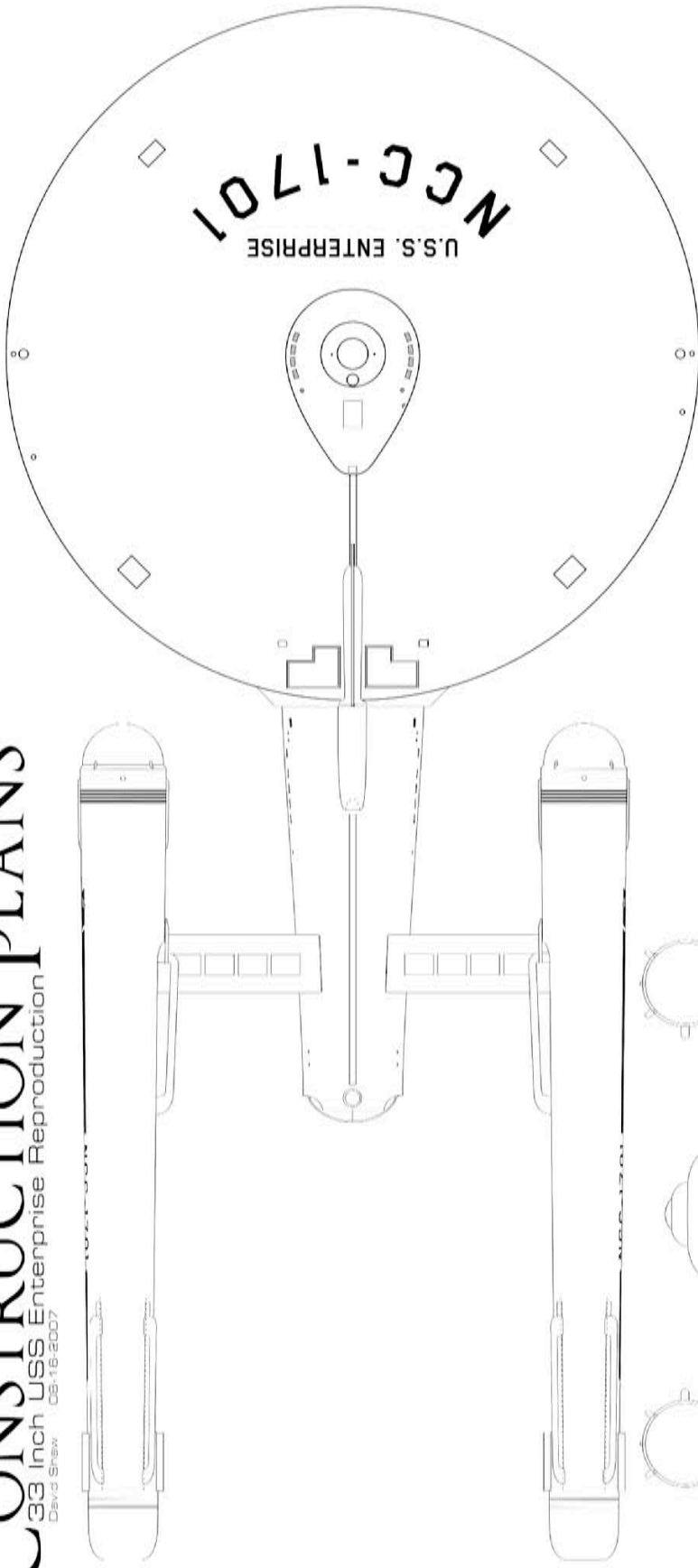
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CONSTRUCTION PLANS

33 Inch USS Enterprise Reproduction

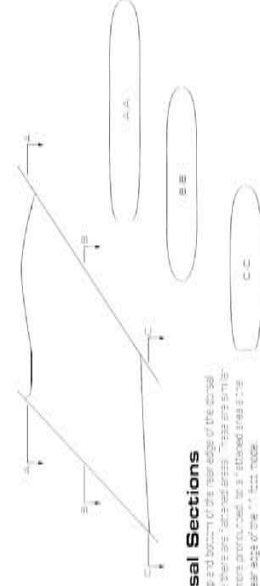
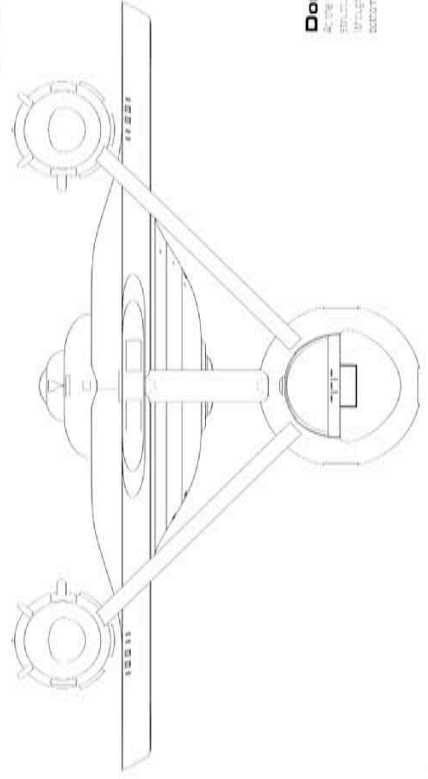
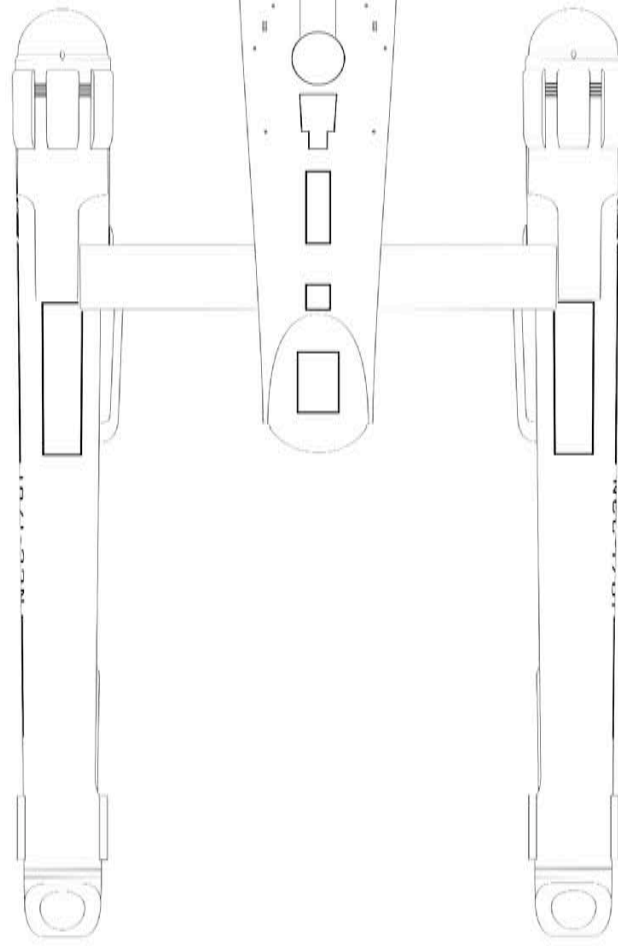
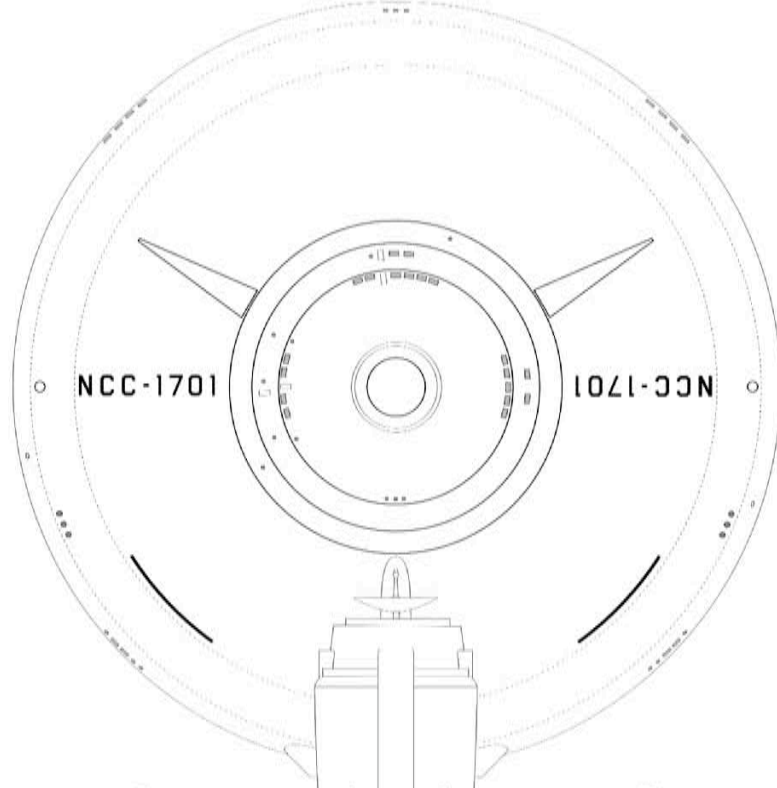
David Shaw | 08-16-2007



CONSTRUCTION PLANS

33 inch USS Enterprise Reproduction

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Dorsal Sections

These sections show the internal structure of the model. The sections are labeled A-A, B-B, and C-C. The text "Dorsal Sections" is visible.

