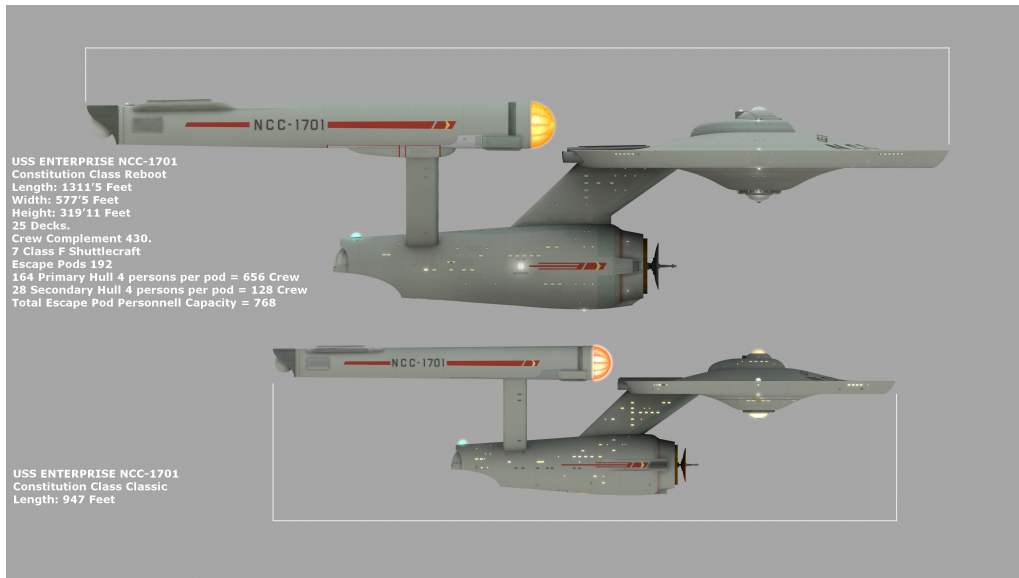


USS ENTERPRISE NCC-1701 REBOOT 2018

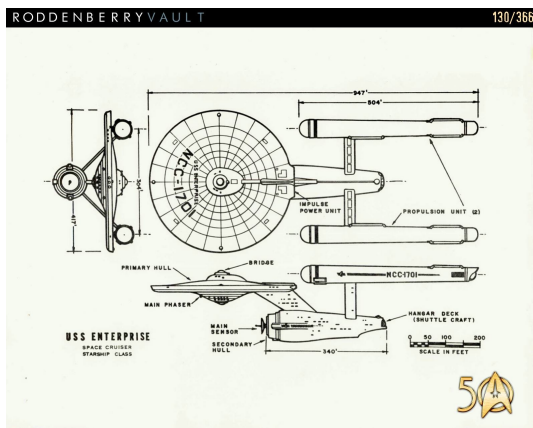
Designed by Gerard Duffy aka gmd3d

WORK IN PROGRESS

Why a rethink for the classic USS Enterprise NCC-1701 scale is suggested while the main focus of this is on my reboot or reworked design I will be referring back to the classic design a number of times, the classic Enterprise designed by Walter M. Jefferies for Star Trek remains my favourite spaceship design.



The dimensions of the Constitution-class, 947 feet (289 meters) long for the original configuration has been set in stone in time immemorial as far as Star Trek lore is concerned. That being said and oddly enough, neither dimension has actually ever been canonically confirmed, as neither dimension was ever seen or referred to in any of the live-action Star Trek productions.



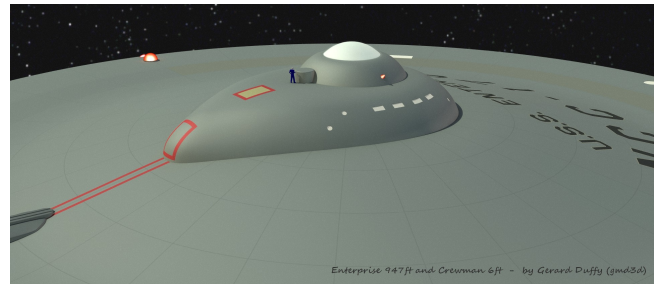
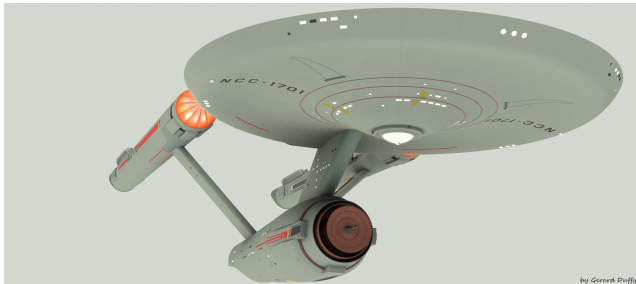
The original configuration length of 947 feet was first derived from Stephen Edward Poe's reference book, *The Making of Star Trek*, p. 178, and that dimension has been propagated in every subsequent reference work ever since. However, what Poe did not mention was that designer Matt Jefferies had originally produced that graphic in 1967 as a reference for Poe's employer, model kit company Aluminum Metal Toys for their 1968 second edition retooled USS Enterprise model kit, No. S951 – where the graphic was displayed on the side of the box prior to its publication in the book – and not for the actual Original Series production.

Remarkably, the dimension of the starship had been in flux until that time as producer Gene Roddenberry's memo of 24 August 1964 evidenced, "We anticipate a final design might see the ship as 200 feet in length, and thus even a 1½-inch scale would give us quite a huge miniature." This figure, initially accompanied with a crew complement of 203 would actually more or less stand until Jefferies, utilizing his engineering background, recalculated the figures for his design three years later. (*The Making of Star Trek*, pp. 89, 134) -

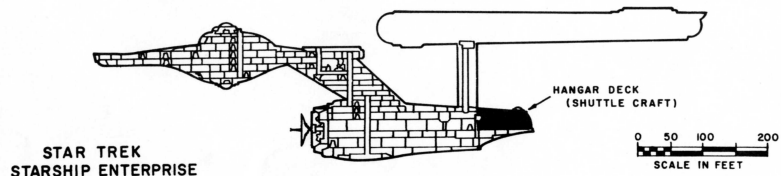
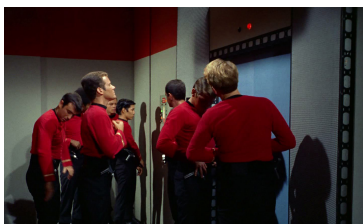
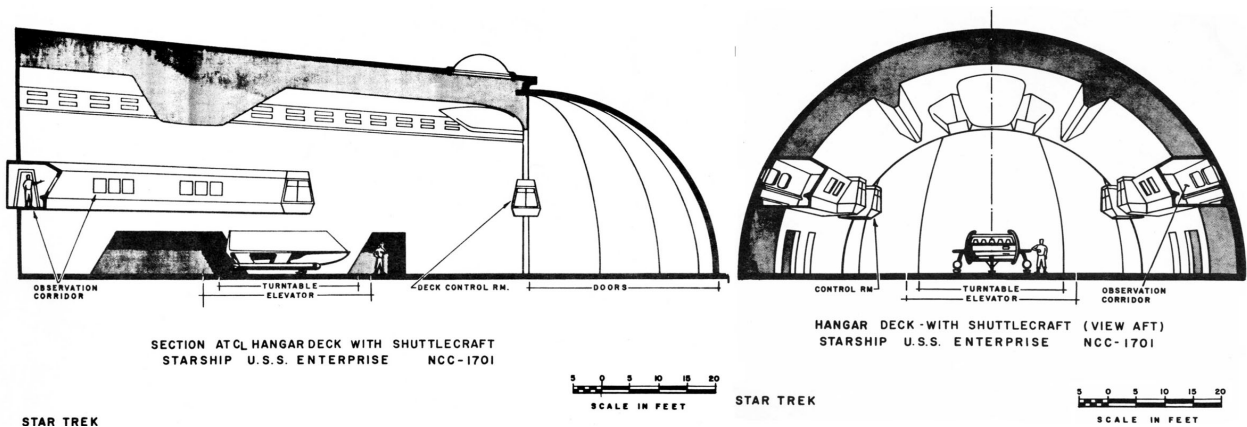
Note: this was before the blueprint where made for AMT and the model kit, the finished 11ft model had yet been finalised in 1964 the making of Star Trek book was published in 1968 which was also around the time of season 2, so I think there is grounds that the scale of the Enterprise was still in flux or was not a priority in the struggle to make and keep the show on air.

The original configuration Constitution-class length came closest to canon, when two ship size comparison graphics were featured in the Original Series third season episode "The Enterprise Incident". The two computer console graphics, also created by Jefferies, showed a Constitution-class vessel in comparison with a Romulan D7-class battle cruiser and an in the episode barely discernible yardstick. Yet, careful measurement of the production art of the graphic, using the featured yardstick, measured the Constitution-class vessel actually at exactly 900 feet (274 meters). Jefferies later sold his original plan view design art, including that for AMT, in the Profiles in History The Star Trek Auction of 12 December 2001, in order to raise funding for the Motion Picture & Television Fund charity.

I soon found the original scale of 947ft was problematic in a number of areas, from the bridge down to the hangar bay, with most blueprints we have only lines displaying hulls and decks but no real thickness to them. I first noticed once I started building the model to its fictional scale, to help me I started to use a cgi crewman who's scale is set to 6ft when I placed the "crewman" behind the bridge on the 947ft Enterprise model, the aft tube behind the bridge is considered by many to be the turbo elevator it became obvious to me that it was a problem, much to my surprise! But as I looked and imagined the hull thickness and the size of the bridge with consoles and so forth would there be enough space for all that was just the bridge and turbo-shaft.

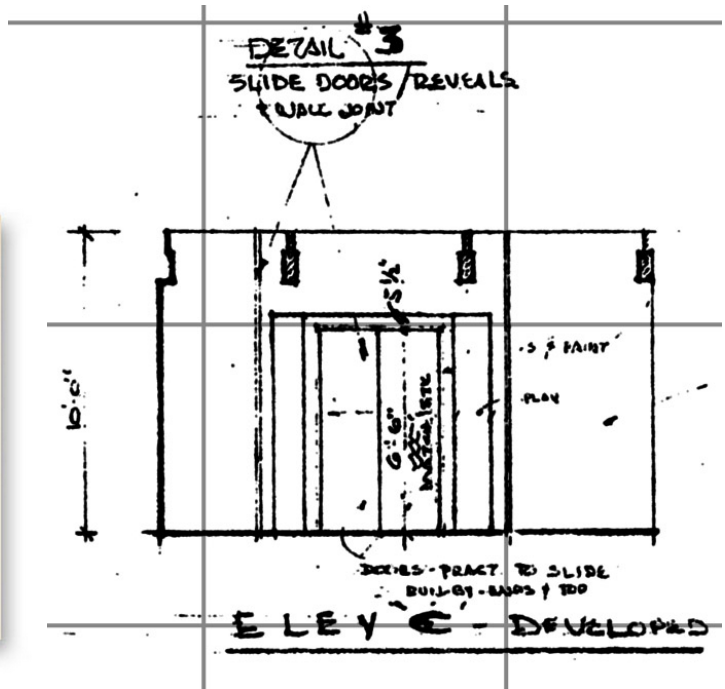
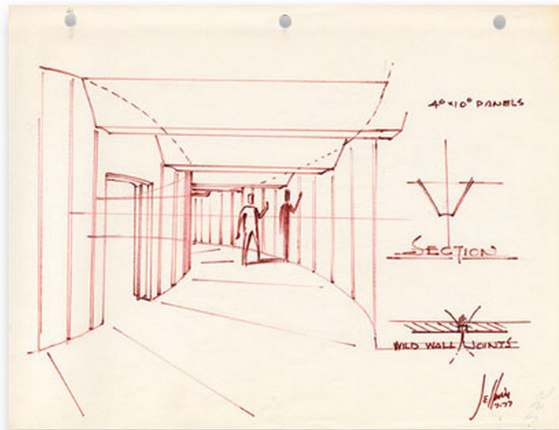


In *The Making of Star Trek* by Stephen E. Whitfield & Gene Roddenberry the Hangar Deck by Walter M. Jefferies the scale is given as 30ft wide 60ft high and 100ft long, which is fine, but not seen in the access corridor we see in season 2 episode Journey To Babel.



This sequence featuring the arrival of Ambassador Sarek and his wife Amanda to the Enterprise set the scene for us the viewers, access door and the corridors are to the sides of the hangar bay, this makes sense as the main engineering section is just behind the forward bulkhead, but I wished to keep to as much of the screen reference as I could, this was another area where the 947 foot long Constitution class ship was problematic, there was not enough room for any corridor, taking into account the thickness of the inner walls and outer hull which I allocated a foot or 12 inches in thickness through out the ships design.

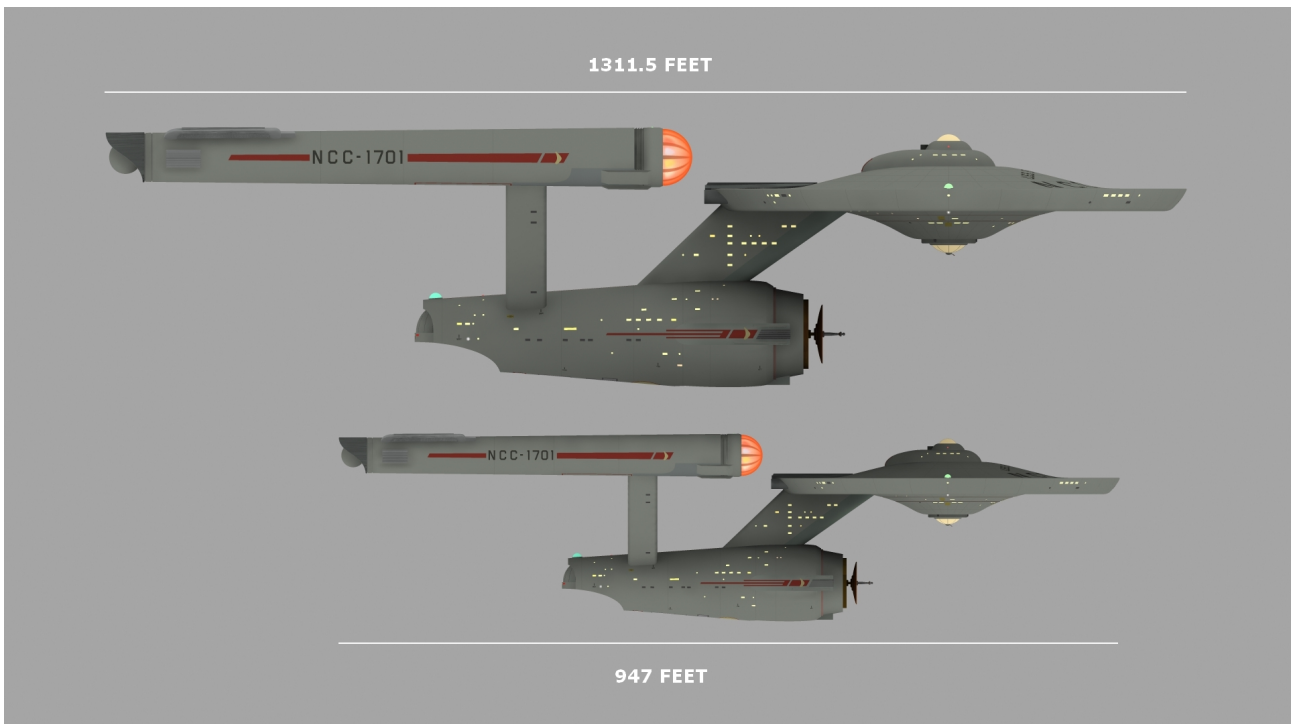
Another aspect I decided on is deck height, I did this early on as I wanted no regrets and having to return and adjust the design/model again later even though it was made tweaking the design takes time, so I went with the set design deck height, which was 10 feet tall the wall segments where 4 feet wide apart from the doorways sections.



I fully understand and accept that the height was most certainly a factor for lighting and we the viewer would never and to my knowledge have never seen the light source in the corridors, at least not until Star Trek The Motion Picture. So I went with the 10 feet deck height, though some decks will be taller up to 14 ft or 16ft in the secondary hull and dorsal neck which could be dedicated to machinery or structural requirements.

So with these observations made when I started I began to increase the scale I was hoping to fit the bridge without the 36 degree offset, but even the increased scale does not allow a turbo-shaft into the bridge dome. Its not the diameter that is the problem, but the vertical curve of the dome, in my model I added extended section to house not one but 2 vertical shafts but also a horizontal transfer tube.

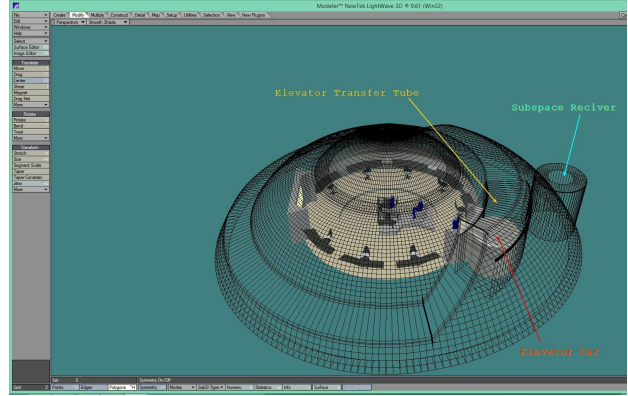
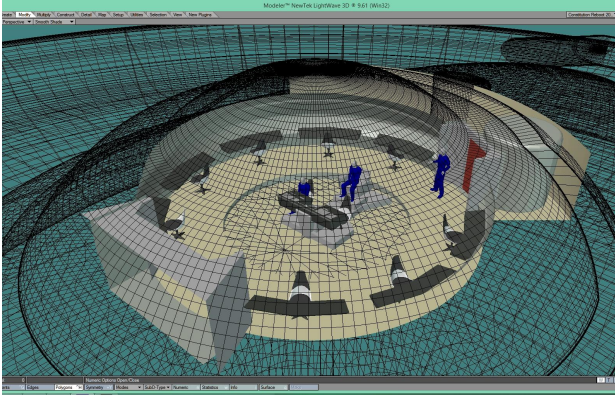
I have to add here that I did not just jump to 1311.5ft scale, not at all, it was weeks of making small steps in each section, these sections had to fit so with trial and error I arrived at this current scale.



I will admit here that the change in scale visually takes time to adjust too. A number of friends have said it and I respect their point of view, some just ignore this effort and that is just fine too.

The Bridge.

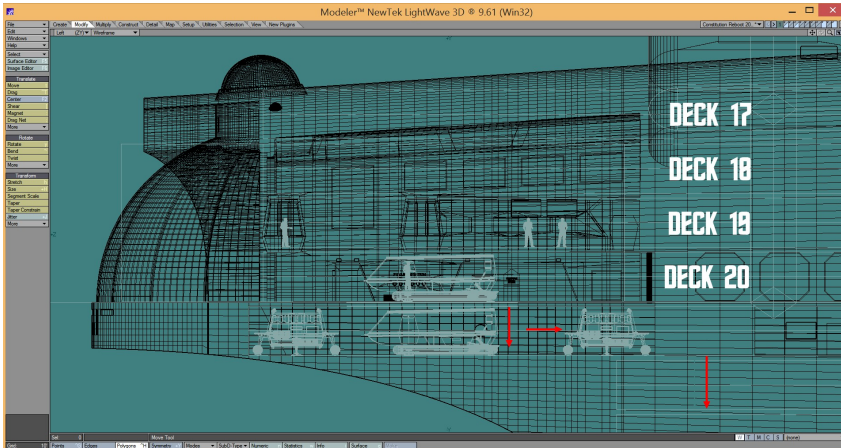
The following images shows the bridge I was using as a reference for my reboot design, it was basic and to with the set design or as close as I would with the information available (maybe some degree of error but I think the error is minimal) this was very early in the development, the bridge had to fit within the shell of the bridge dome, apart from the turbo-shaft, to fix that I had to increase the scale to around 1500ft and that was not acceptable to me, it created more problems then it fixed, so it was best to move on.



The images show a horizontal transfer tube for the elevator, it one of the things we would see is either Captain Kirk or other bridge crew entering the elevator just as another elevator has departed, mere seconds hardly enough time for the replacement elevator to arrive, they would have passed through each other, (granted its a TV show, but I wondered what I could come up with), the elevator transfer tube was a solution.

The Hangar.

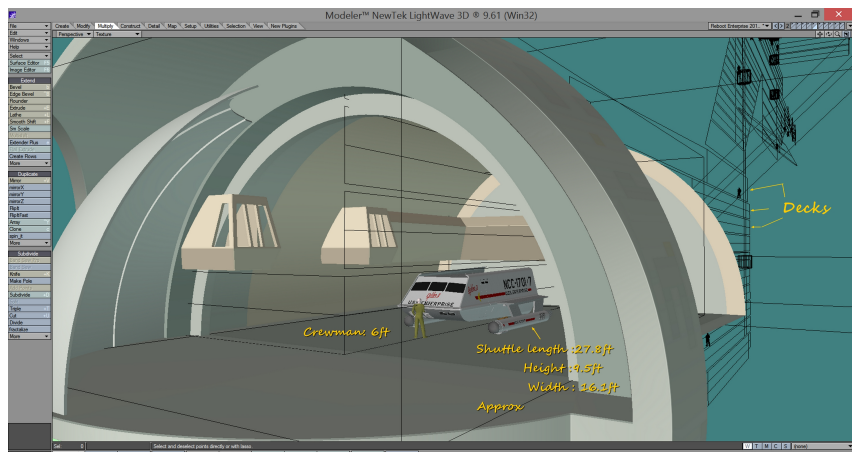
The hangar bay is another area where scale matters, for example the shuttle craft have to large enough to carry crew and the length given is given as 24ft or 27.8ft. I tried both but found the latter works better and I placed my 6ft crewman to check and found it does work well. But the 27ft shuttle does not fit well into the 947ft with very little room to manoeuvre.

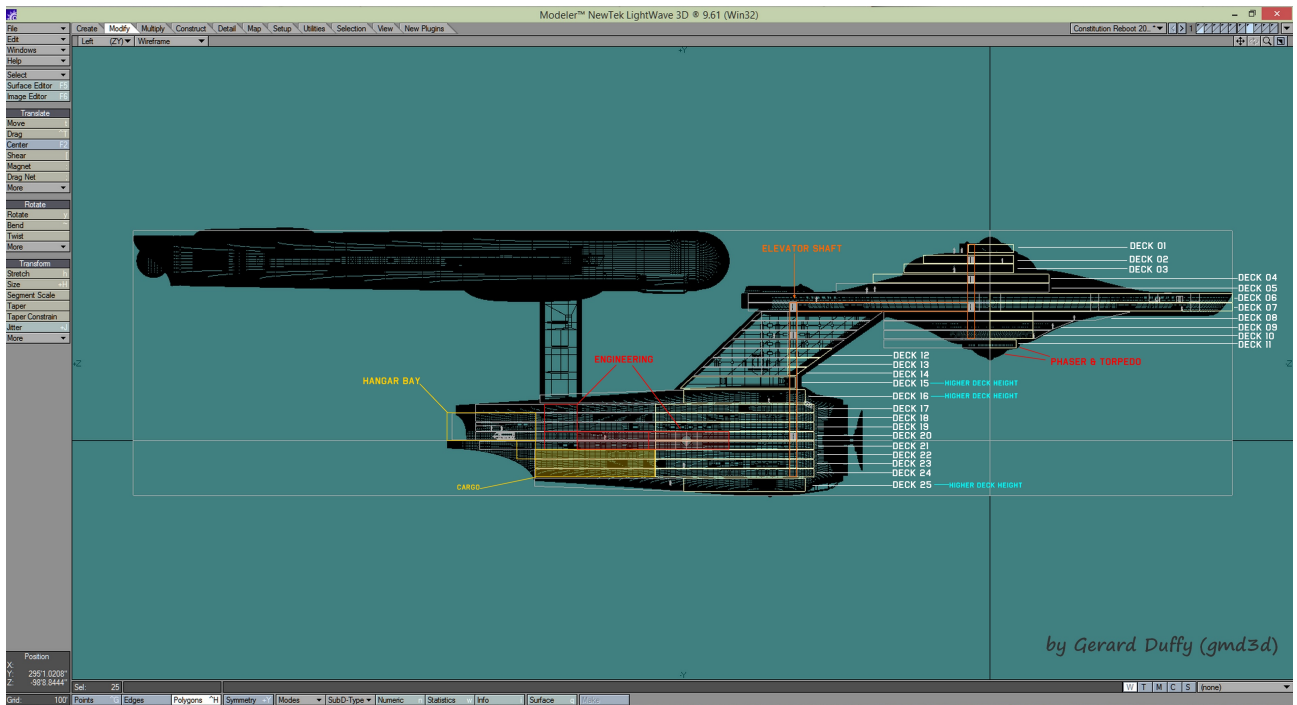


This image is the 1311.5ft scale from early in the build, it been reworked since.

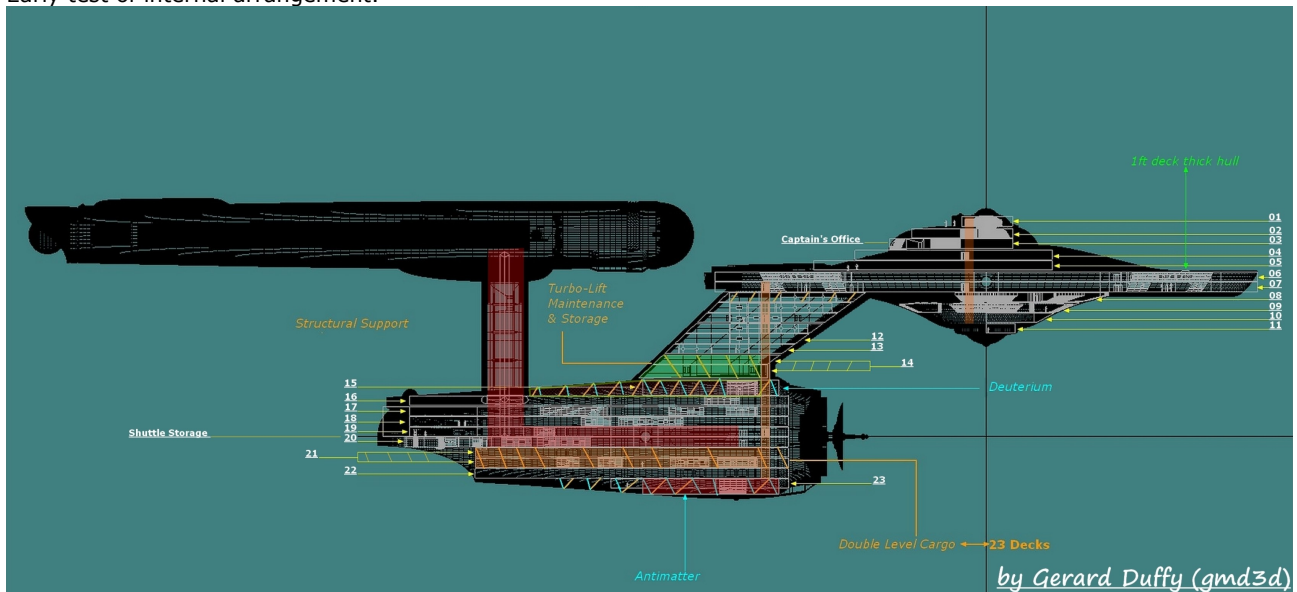
Early stage for the hangar bay, scales for the shuttle and crewman is provided on the image.

The Shuttle featured is by Aggi.





Early test of internal arrangement.



Latest test of the internal arrangement.

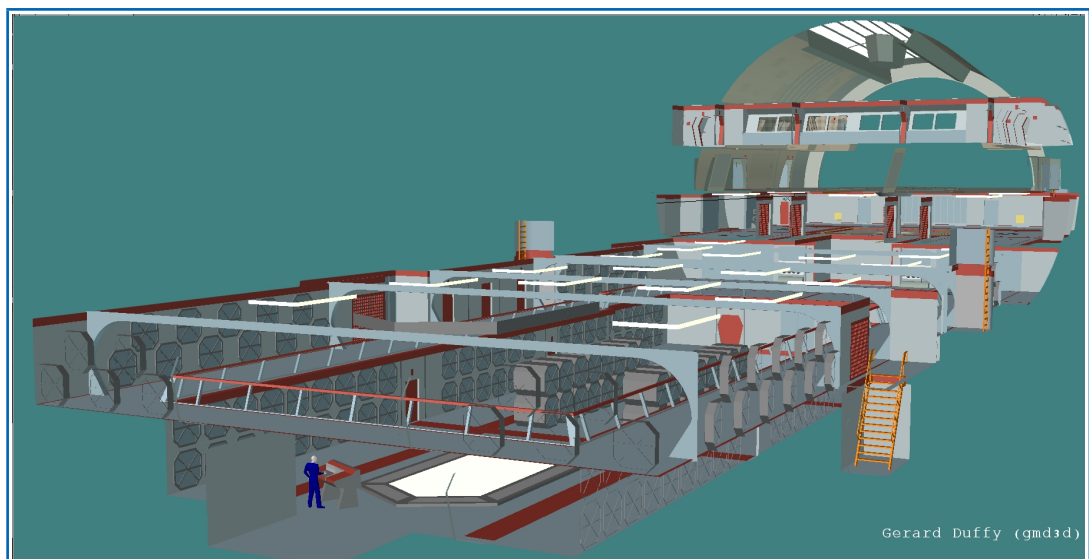
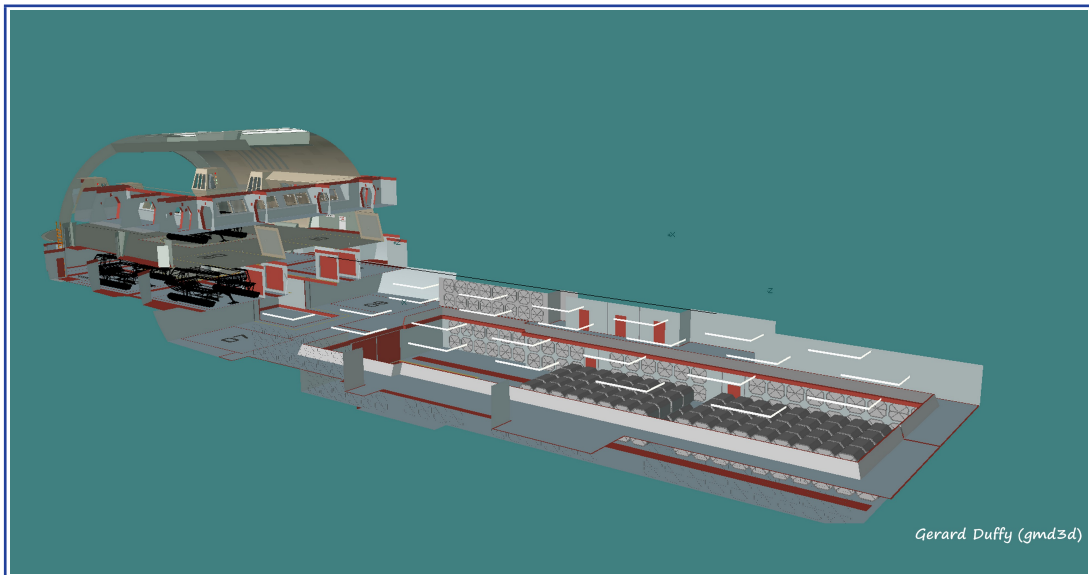
With the increase of scale taking into account that the average deck height is 10ft still have me more than the 23 decks I have long accepted based first on *The Making of Star Trek* 1968 and later *Star Trek Encyclopedia* first edition, I also set the hull thickness and deck thickness to 1 foot (12 inches) or (30.48 cm). Using as much screen references as I could from *Star Trek* first time we see out a porthole is in Season 1 "The Conscience of the King" as Captain Kirk shows Lenore Karidian around the Enterprise.



The next time we see out another porthole is in Season 3 "The Mark of Gideon".

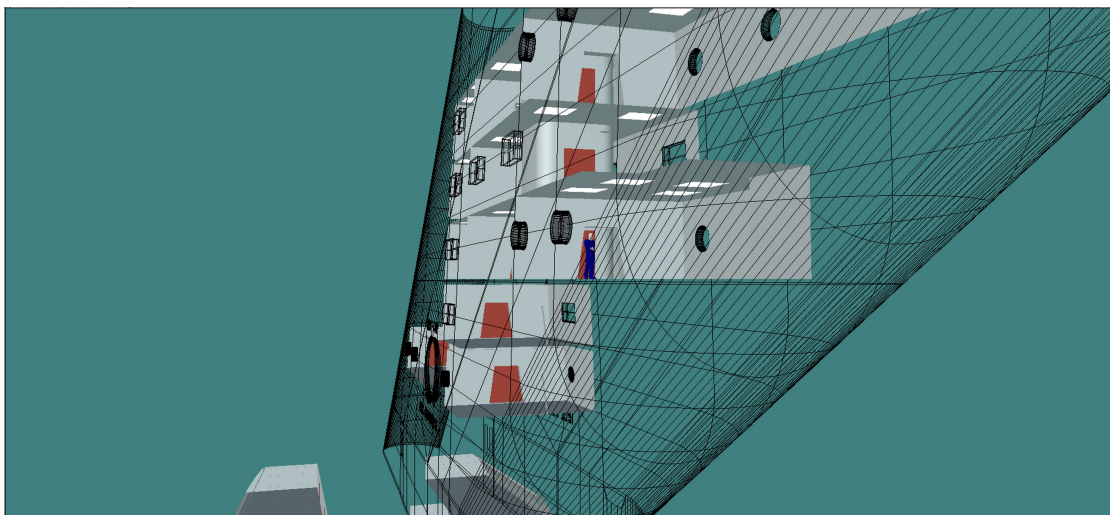
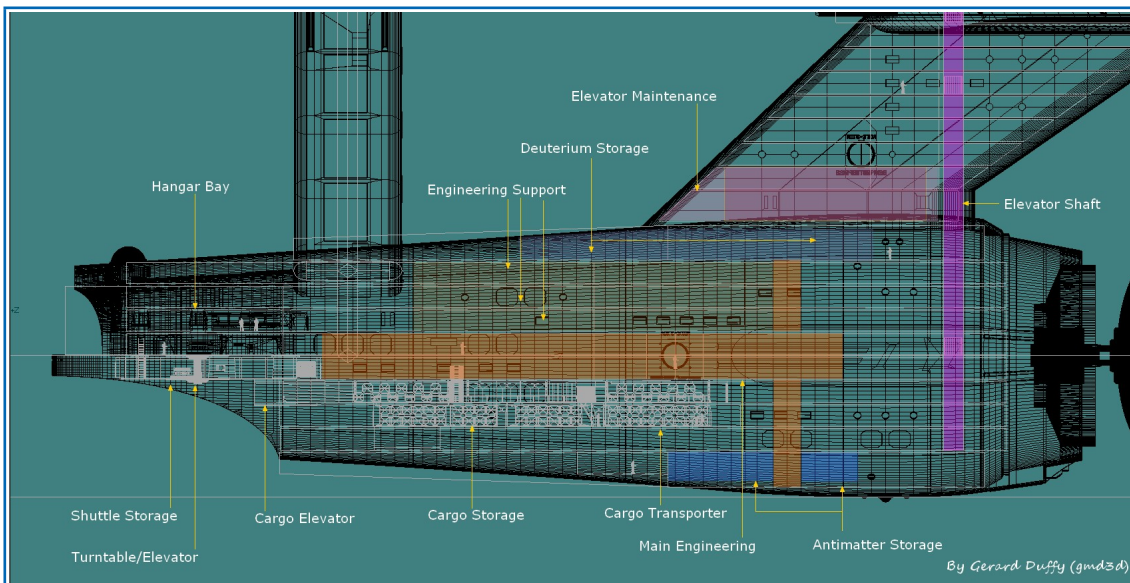


I think this area in The Mark of Gideon could be in the teardrop shape beneath the bridge
So around a foot thick for the hull and I extended that to the decks, I have had fellow fans suggest 9ft 6in deck height and it could be, no reason why not apart from my desire to retain the visual look where we see the cast, but lets say the decks are 9ft 6in I would use the 4in on the decks / ceilings etc.
I also believe that some areas could have additional thickness, for added structural support or protection, fuel supply and Antimatter storage, I also created a large cargo storage area, I only made use of the turntable/elevator to travel down to a main storage area for shuttles where there is a secondary lift for cargo and 2 additional places for shuttle storage, I made the cargo pods like those seen in Star Trek The Motion Picture.



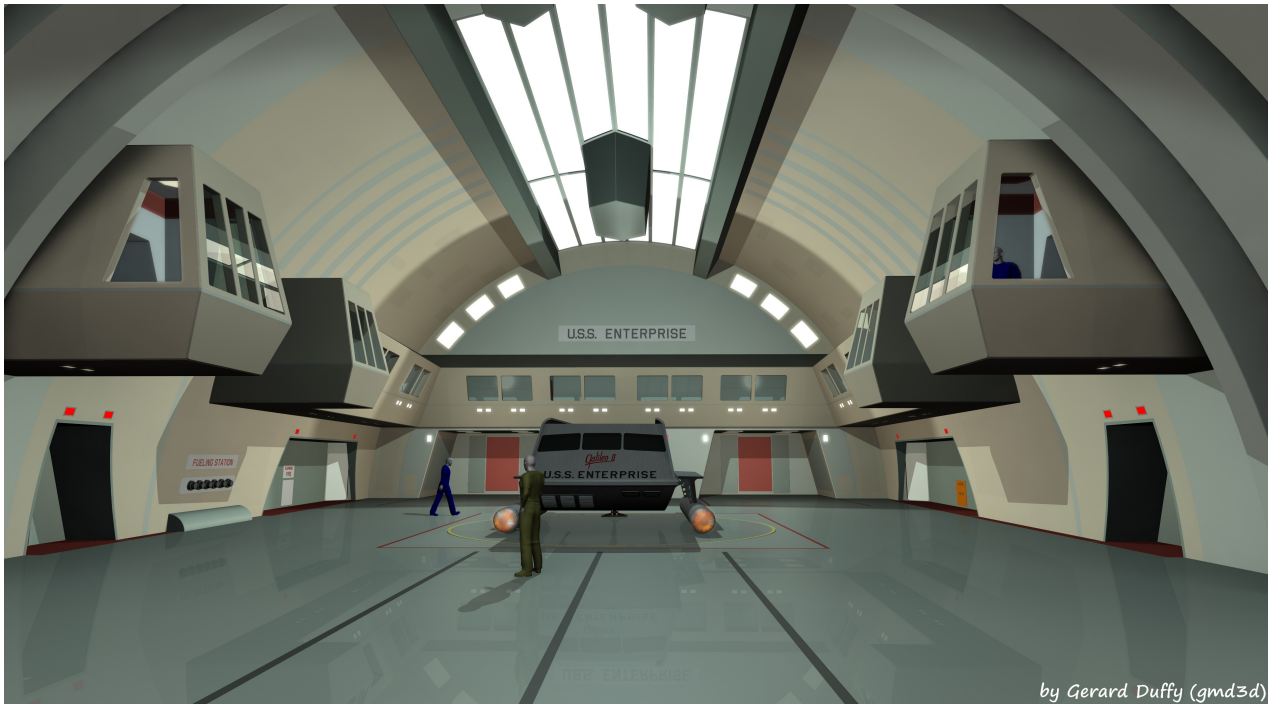
Then I remembered cargo Transporters and added one large one to the cargo area, this 2 level deck would have another section forward with a smaller cargo area, I have tried to imagine how the other sections would be used, a basic plan so far is this below.

The Elevator section could be a large deck split into 2 levels with the dorsal neck superstructure built up here too, a large space to use.



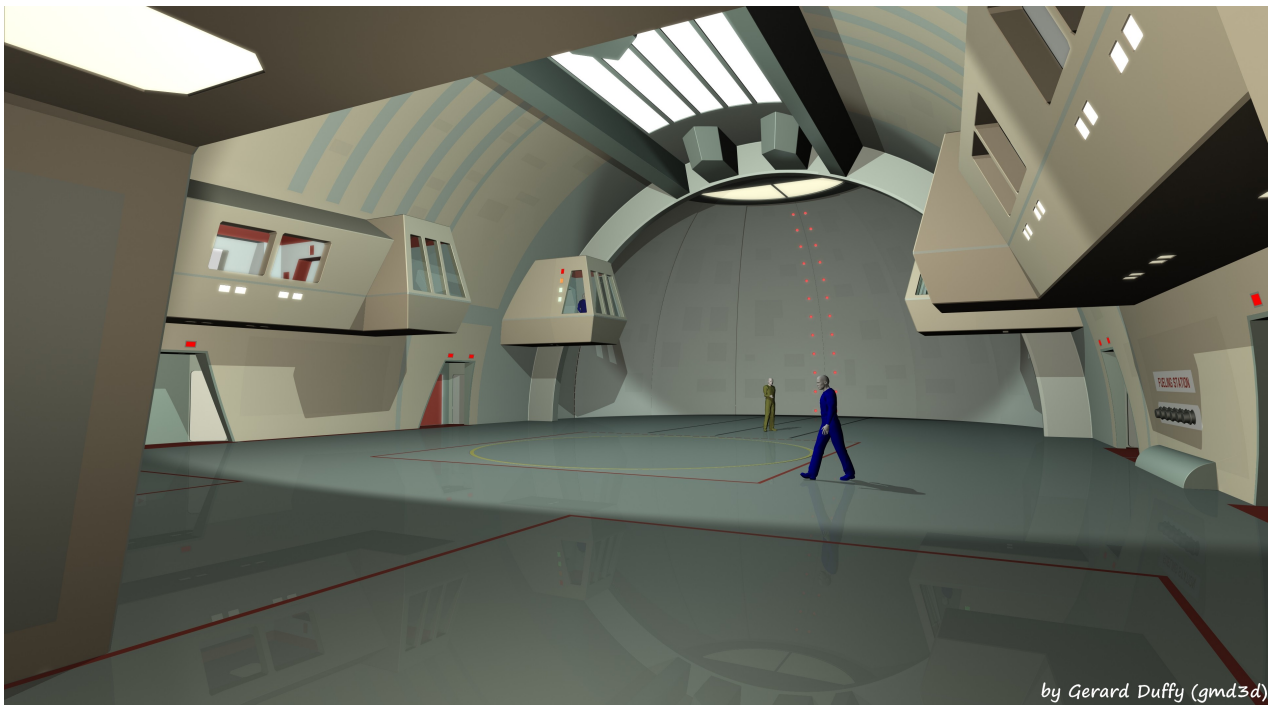
What can you place in this section, I mainly imagine conduits elevator tube/shaft etc., this is why I have placed a maintenance area at the dorsal base, perhaps the elevator cars can be stored in a few levels when not in use between the Primary hull and the secondary.

I have since removed the docking hatches from the dorsal neck that can be seen in a number of images.



by Gerard Duffy (gmd3d)

The Main Hanger bay, the shuttle featured was made by Aggi, the hangar bays overall length is 108 ft..



by Gerard Duffy (gmd3d)

This model at just over 100ft would not fit easily in the 947ft Enterprise.

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