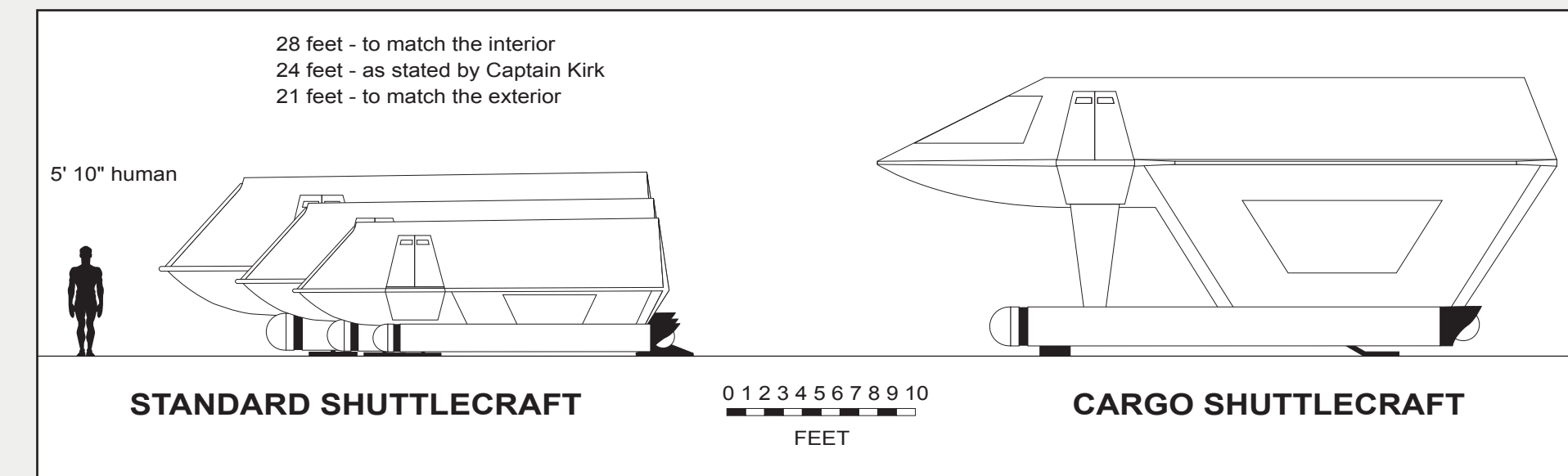
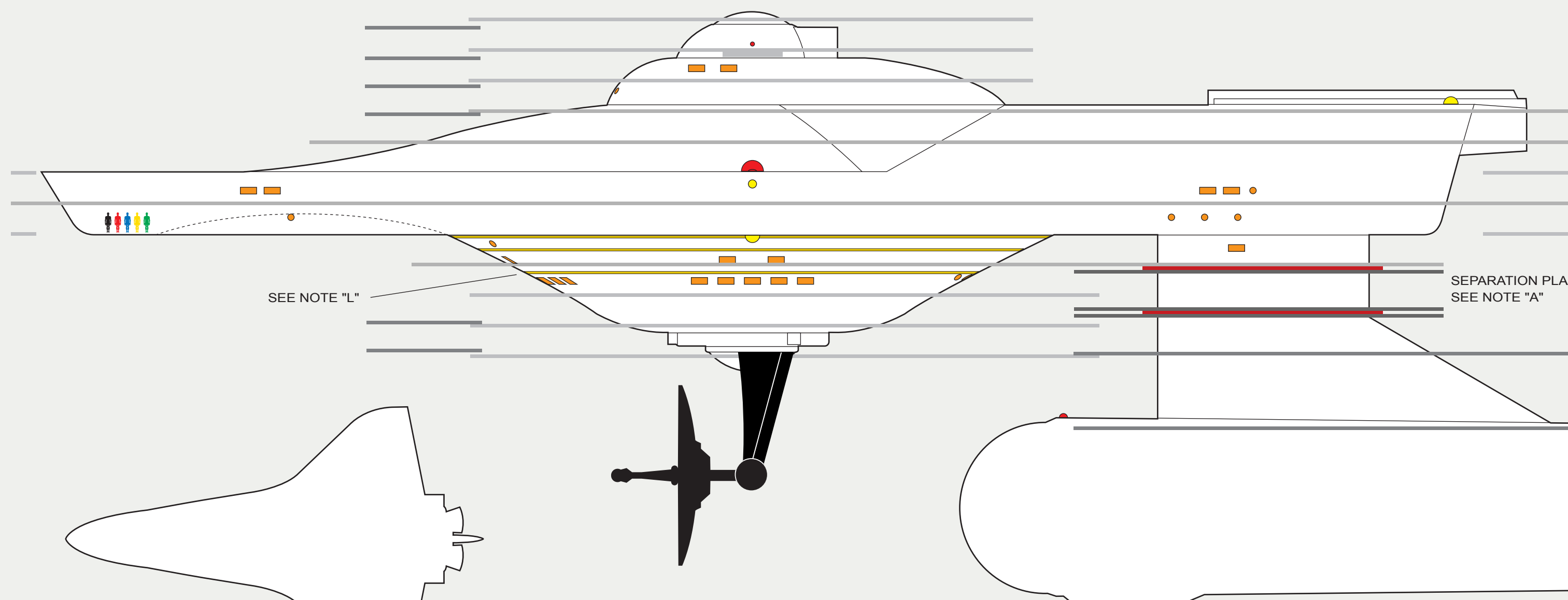




- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12



1/100 scale, if this page is printed at a height of 17 inches

**SPACE SHUTTLE**  
(Shown here for size reference)

## BACKGROUND HISTORY

This project is an extrapolation of the U.S.S. ENTERPRISE drawings developed earlier this year. Those drawings were governed by 3 criteria:

- (1) The 11-foot-2.08-inch (3.4-meter) studio model,
- (2) The Writer's Guide, and
- (3) The 79 episodes plus the original pilot.

There are no such criteria to guide these drawings, but the basic design philosophy is to complete this ship in the same style that Franz Joseph (FJ) developed for his Technical Manual and in the same style as his Heavy Cruiser blueprints. The goal is to try and fit all the components inside the hull. But what are "all the components"? What are the roles of "Frigates" in the STAR TREK universe?

A "Frigate" was a type of ship used on Earth. They were a type of warship of various sizes and roles throughout history. They were originally built for speed and maneuverability with all their weapons on one or two decks.

After several hundred years, they settled into the role of protecting other ships (military or not). Specific titles include Guided Missile Carrier, Anti-submarine Hunter, and Air Defense Support. A final iteration involved high-speed deployment of small craft rather than direct combat with other ships.

In Starfleet, a "Frigate" is a fast, medium-sized ship intended to protect other vessels. That protection is provided by the ship-mounted phasers and photon torpedoes, but also by the many small craft stored in the hangar bays.

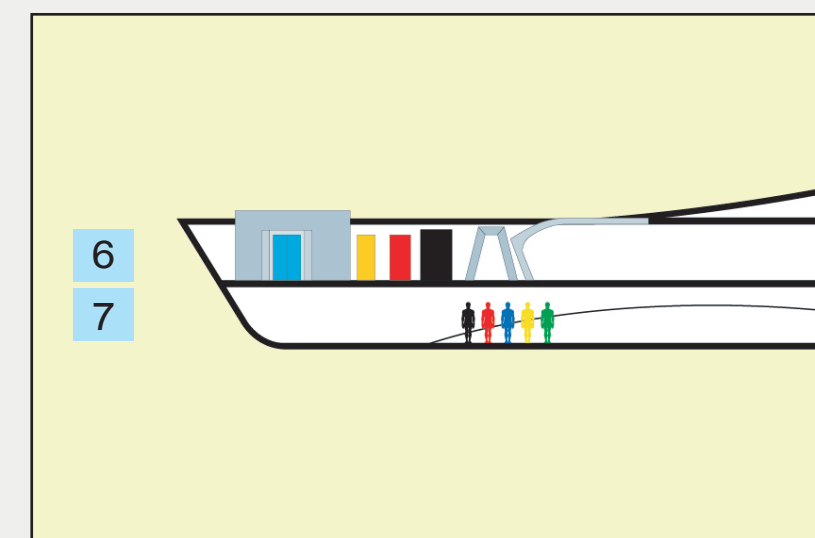
The Transport / Tug had an energy surplus. It is this energy surplus which led to the Surya-class and Avenger-class designs. The Surya-class Frigates used that energy surplus for Hangar Bay Operations and (to a lesser extent) Cargo Operations.

This layout retains the lines as established by David Nielsen from his U.S.S. AVENGER General Plans. Certain details were changed to match the details on the studio model of the Heavy Cruiser. Also, some details were changed to maintain continuity with my other drawings.

Special thanks to David for permission to expand on his original design.

## NOTES

As with my Heavy Cruiser plans, I started at the edge of the primary hull (see image below), where the height of 2 decks, the thickness of 1 floor, and the thickness of 2 hulls have to fit in this part of the saucer.



I built them upwards and downwards from my starting point, Deck 6 and 7. However, this makes the Bridge too high, and Deck 11 too low. The dark grey horizontal lines show the adjusted deck locations.

Disconnection equipment is located in each engine pylon. It can only be reached via Jefferies Tubes, which are also used to climb down to the engine inspection stations. It makes sense to keep this area clear of crew and difficult to access except by authorized personnel.

The undercut on the Primary Hull affects Deck 7. However, the concave undercut of the Primary Hull was flattened at the rear so as to strengthen the hull at the point where the warp pylons attach to the Primary Hull. This allowed an expansion of Engineering.

In CHARLIE X we saw how thick the walls are and also what is in the walls. The DESILU plans of the set show walls that are 1 foot (0.3 meters) thick and sometimes even thicker. I decided to make all walls, decks, and hulls 1 foot thick, never thinner. In a few places, the walls are even thicker.

This leaves a ceiling height of 8 feet (2.44 meters) for each level.

The one set piece (reminiscent of a ship's rib - often seen in the Briefing Room) does not quite fit. However, all the other details (doors, openings, etc) do fit (see image at left). I consider the trapezoidal openings to be isolation doors ... in case of hull breaches, damage control, intruder alerts, etc.

In my profile drawing (at the top of this page) the light grey horizontal lines show the initial deck locations. They represent a constant 8 foot ceiling throughout the entire ship.

## GENERAL NOTES

Are the wide steps in Engineering considered to be "stairs"? Are the steps on the Bridge considered to be "stairs"? Perhaps stairs do not appear in any episodes, but that does not mean they do not exist in Starfleet ships. Therefore:

1. After engine nacelle disconnection and an emergency landing, stairs on Decks 4, 3, and 2 lead up to the hatch, thus allowing the crew to leave the ship quickly.
2. Each of the 2 Recreation Rooms on Deck 7 have balconies on Deck 6. Those balconies have stairs that lead down to their respective Recreation Rooms.
3. The two Cargo Operations areas on Deck 7 have wide stairs as well as cargo lifts.
4. Stairs connect the two levels of the Deflector Equipment at the front of the hull.
5. Stairs connect Impulse Engineering and Warp Engineering.

Aside from these stairs, the rectangular ladders (within rectangular alcoves) and the triangular ladders (within circular alcoves) supplement the turbo-elevator system. If that system fails, or in some other emergency, ladders alone would not be very efficient; it is easier to carry something up stairs than up a ladder.

There are external features that do not need to be marked: hatches for the Phasers, hatches for the Photon Torpedo Launchers, and the Primary Hull / Warp Engine disconnection line, to name a few. These drawings attempt to make sense of the markings that ARE visible on the studio model of the ENTERPRISE, all of which is then extrapolated onto the Frigate.

More notes relevant to each deck appear on the following pages.

Contradictions and errors exist within the episodes. I am sure 100% continuity is not possible.

I hope these pages provide you with some pleasure, information, and ideas for contemplation / consideration.

If I missed something, please let me know.