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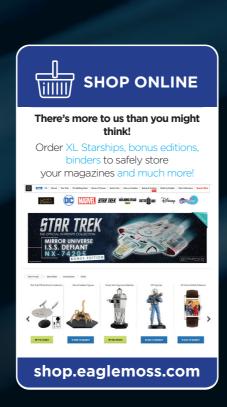
SPECIAL ISSUE

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04: DESIGNING THE INTERIOR OF THE ENTERPRISE-D







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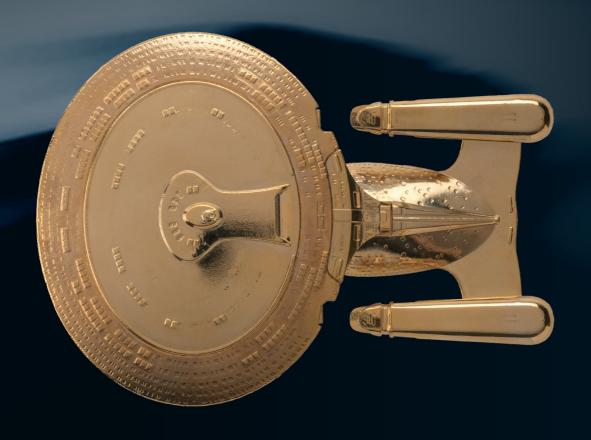
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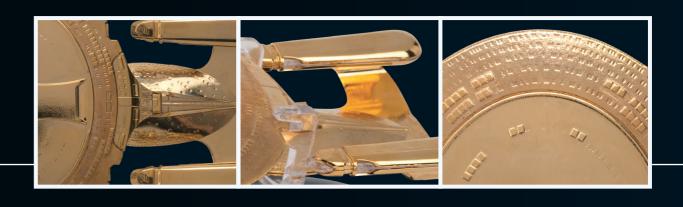
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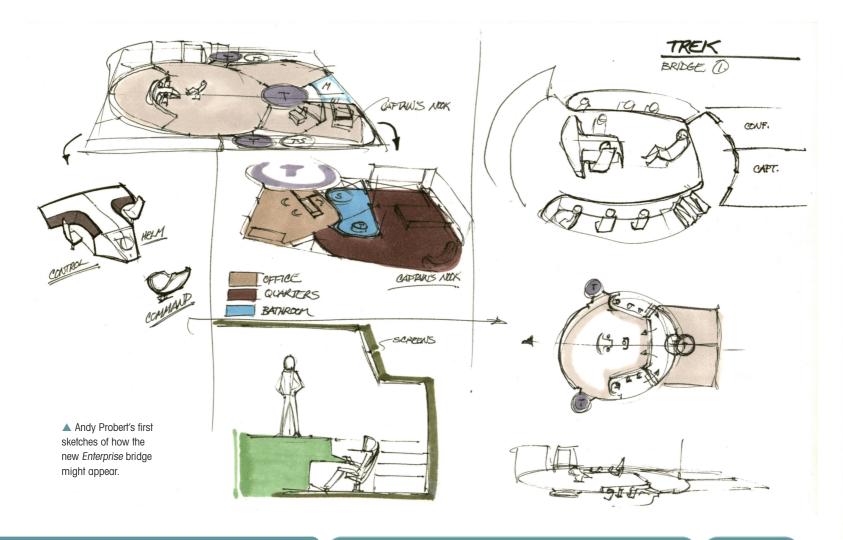
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# U.S.S.GOLD ENTERPRISE NCC-1701-D







## DESIGNING THE INTERIOR OF

### THE ENTERPRISE-D

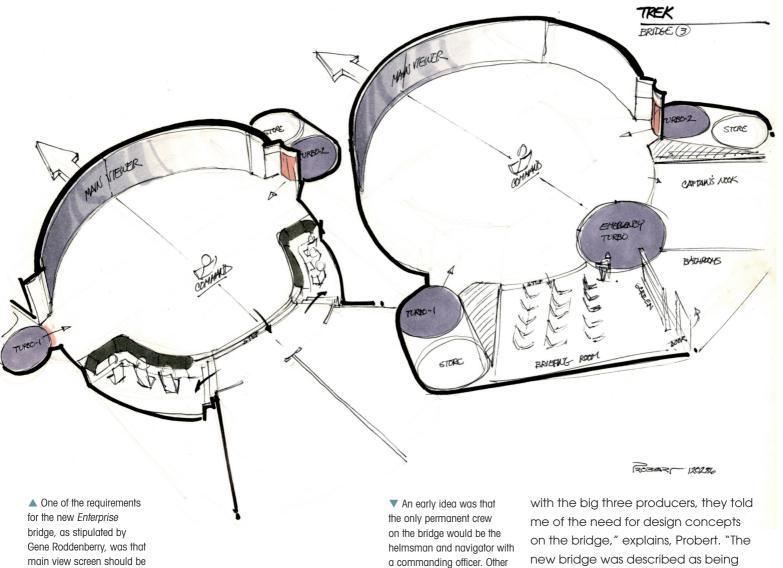
### The launch of STAR TREK: THE NEXT GENERATION required the construction of a brand new U.S.S. Enterprise...

big fan of the original STAR
TREK, Andy Probert was thrilled
to be hired as a designer on
STAR TREK: THE MOTION PICTURE, not
long after leaving college. He enjoyed
his time on the production, designing
Federation starships, but once the
movie wrapped he assumed that it had
been a once in a lifetime opportunity to
work on STAR TREK. He was mistaken...

Several years later, in 1986, Probert turned on a TV news broadcast. He watched as *STAR TREK*'s creator, Gene Roddenberry, announce that production would soon commence on a brand new *STAR TREK* series – *STAR TREK: THE NEXT GENERATION*.

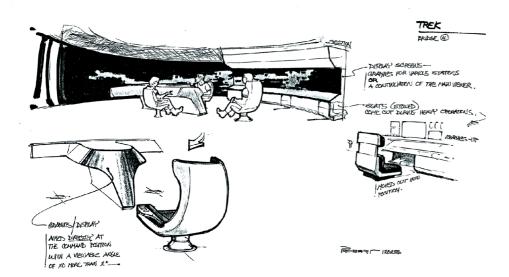
Probert immediately put in a call to Roddenberry's office to request a meeting. It wasn't long before Probert was talking through his portfolio, telling Roddenberry and his co-producers Bob Justman and Eddie Milkis how his career had progressed since STAR TREK: THE MOTION PICTURE. Although it was still early days on the show and an art department was yet to be set up, Probert was hired in November 1986 as a designer and was set to work.

"After a welcome aboard meeting



stations could be activated

and manned as required.



much larger than on previous

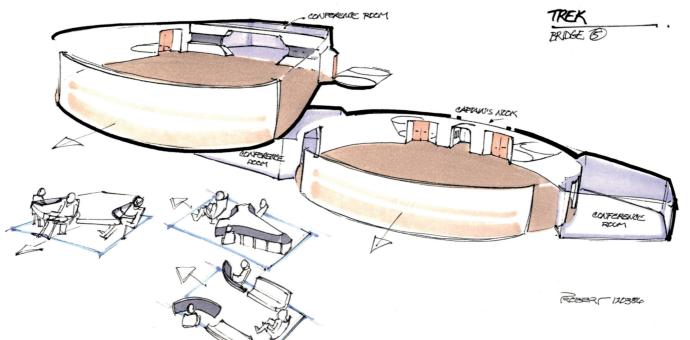
versions of the ship, taking

up an entire wall.

with the big three producers, they told me of the need for design concepts on the bridge," explains, Probert. "The new bridge was described as being almost totally automated, combining features of a briefing room, ward room, and information retrieval area, with less emphasis on the mechanics of operating the ship. Gene wanted the viewscreen to dominate the front of the bridge like it never had before, and he wanted the instrumentality to be at a minimum so that it was obvious that the entire ship was controlled by just the conn and ops positions. Also the bridge was to be a lot larger than those we had seen, suggesting a larger ship."

### **ON DUTY**

The original plan was that the bridge would not be permanently staffed by a large crew complement, as had been seen in the original STAR TREKTV series and the movies, Instead, there would



only be crewed conn and ops stations, with a roving commanding officer. When necessary, other crew members with specific skills would be summoned and could activate and work from a workstation at the rear of the bridge.

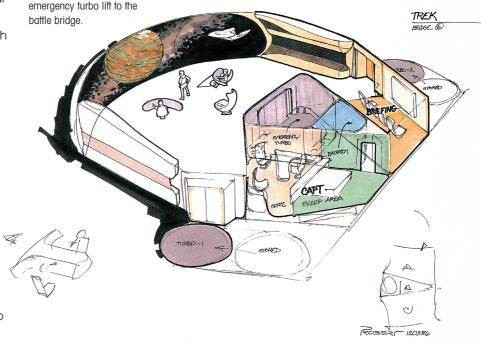
Other new requirements, not seen on previous versions of the Enterprise, were for the captain to have his own private area, or office - initially referred to as the 'Captain's Nook' but ultimately referred to as the 'ready room' - and a conference area or briefing room, both adjacent to the bridge. Both these feature in Probert's initial sketches, dated December 2, 1986. As can be seen in these first sketches, Probert was toying with the idea of the crew positions being on a lower level than the commanding officer, not dissimilar to the bridges of the star destroyers as seen in the 'Star Wars' movies. However, Probert wasn't happy with this approach. "That wasn't working so I unified the conn and ops into a T-shape. The stem of the T comes toward the captain who has his own private readouts. My thinking was that he would have a readout with a two degree allowance. In other words if you moved your head two degrees you wouldn't be able to 5 see the readout. That meant they were specific to his position. Conn and ops would face each other across the T bar and then they would have other operational duties that would allow them to swing forward toward the viewscreen. Because they were facing each other they could turn their heads to have a conversation with the captain."

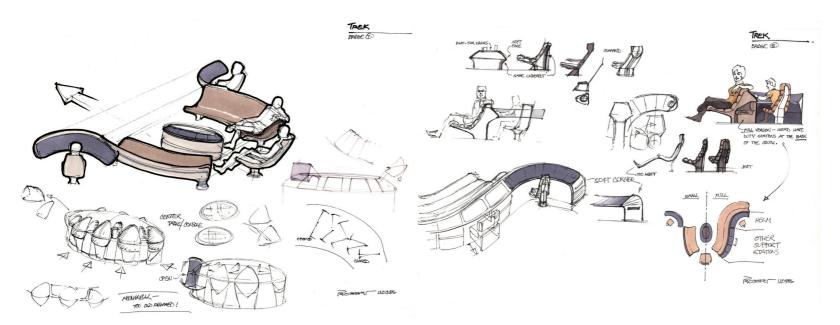
▲ Probert decided that the captain should have an uninterrupted view of the screen and a clear path to it, so experimented with splitting the conn and nav panels apart.

Probert's designs featured rooms adjacent to the bridge, including an office for the captain, a briefing room and an emergency turbo lift to the battle bridge.

### **VIEWING SCREEN**

A day later, on December 3, Probert produced another set of sketches. He had noticed that in THE ORIGINAL SERIES, Captain Kirk would often have to go around the single unit ops station when he wanted to get closer to the viewing screen. Probert began to experiment with having the ops stations behind the command position, or split apart, so that the Captain might have a clear view of – and path to – the screen.



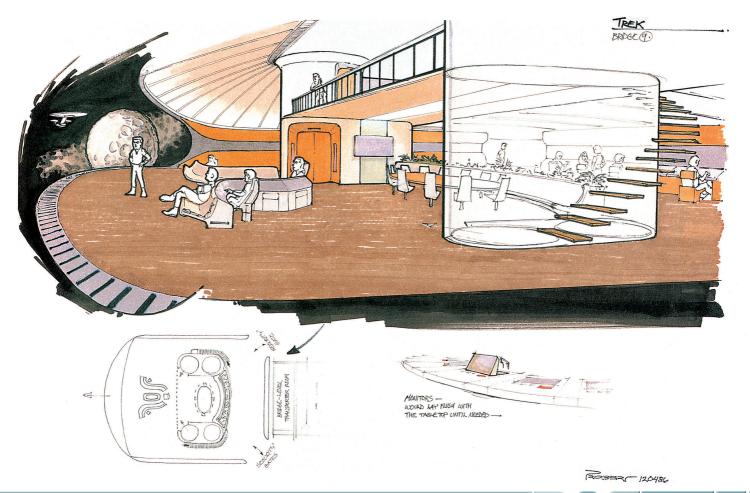


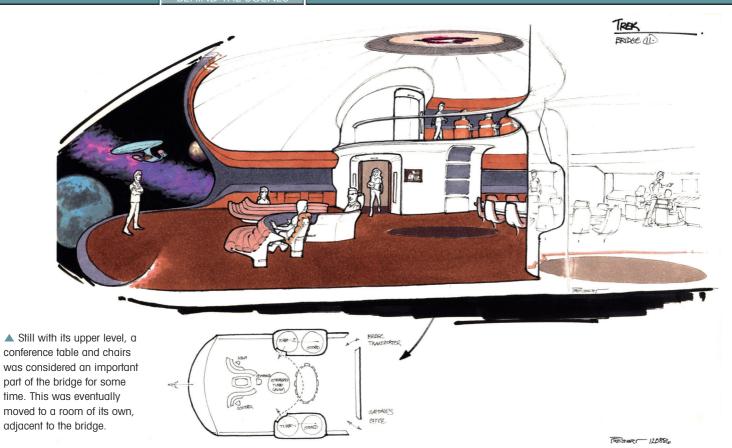
As on the original *Enterprise*, access to the bridge was via turbolift. "I had the turbolifts on both sides of the bridge," Probert recalls. "Eventually that got changed that so they were both on the port side because they wanted to do the major filming of the bridge from the starboard side." On one of his December 3 sketches, Probert also include a third,

- ▲ The new bridge would allow several senior officers to sit together for discussions.
- ▼ At one point, an upper level for the bridge was considered.

'emergency' turbolift behind the captain's station that he envisaged would go directly to what eventually became the battle bridge.

Probert also wanted to provide seating for crewmembers. "There would be the captain's seat and on either side of that there would be some couches. Those would be around



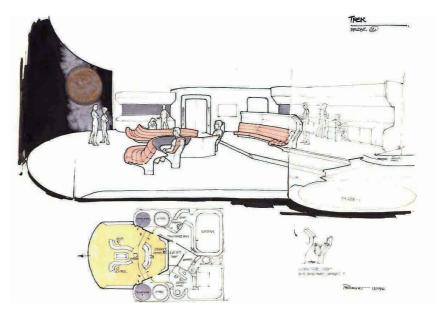


a combination coffee table and viewscreen setting so that people could sit, talk, look at their private workstations, and discuss the danger of the moment with the captain in a kind of round arrangement. The couches then went from that position and wrapped around the conn and ops position so that people could actually sit on these couches looking out into the viewscreen.

### **UPPER DECK**

A significant development in Probert's design manifested in a sketch dated December 4, which showed the bridge to now be significantly larger and with an upper mezzanine level. Probert saw this upper area as having a large amount of work positions. "When Gene was first talking about having a very large area, and he was looking at an information retrieval area, I just imagined a huge area that would have all these stations where all this information could come in and then it would somehow be passed on down to command people."

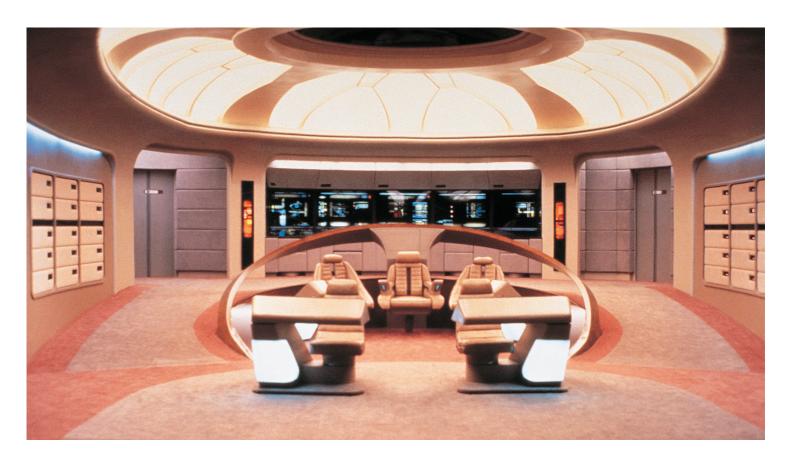
The two-storey bridge is still present in a sketch from December 8, but is now curved. Probert was also continuing to experiment with the requirement for seating and conference facilities. "Once again



you can see that bench idea where they would be sitting around a table with the captain. Then the producers wanted the bridge crew to adjourn to some conference table where they could have conferences about the threat of the moment. I'm thinking 'well that seems kind of silly, to leave your chair, walk back sit at another chair at a table, talk about it, then walk back to your chair'."

A day later, on December 9, Probert's sketches reveal that the bridge is now considerably smaller

▲ One of Probert's later sketches, from December 1986, shows the bridge approaching a design recognizably close to the final version.



than in the previous sketches, and the mezzanine level had been abandoned. However, there is a raised area behind the captain's chair, and the distinctive 'horseshoe' rail with built in control panels makes its first appearance. "It started out as being the backing to the conference bench," Probert explains. "I felt that there was a need to have some stations addressing the viewscreen, instead of having their backs to it. The rail

▲ The complete bridge set as it appeared in the first season of the series. continued on around rather than just chopped off. It gave a visual focus for the bridge command people."

▼ The bridge under construction, with Probert's set model in the foreground.



### **SEATING PLAN**

With the design for the bridge now close to its final layout, there was some disagreement between Bob Justman and Gene Roddenberry about how many chairs should be included around the command position. On the previous versions of the Enterprise, the captain had sat alone at the center of the bridge, but the TNG producers were keen to have other officers sitting next to the captain to allow them to have conversations with him. "The captain's chair remained at the center," says Probert. "There was a compromise between Bob's need for three people and Gene's need for five. That was that there are two actual chairs to the left and right of him, but there is additional bench space outboard of those for people to come sit. So there could be a total of five people sitting. We could have Counselor Troi and Dr. Crusher on one side and maybe Geordi could be with Riker."

Ultimately, Probert's arguments against including the conference table and chairs on the bridge convinced Roddenberry and his fellow producers.



It was agreed that the conference room, or 'officers lounge', would be a separate room, adjacent to the bridge. This curved room featured windows in the hull of the ship, and the conference table itself also matched the curve of the room. On one wall was a display of all the ships that had borne the name *Enterprise* as gold scale models, including the as yet unseen *Enterprise*-B and *Enterprise*-C.

### **CAPTAIN'S OFFICE**

As well as the conference lounge, the other major set attached to, but separate from the bridge itself was the captain's ready room. This smaller room went through several different iterations as the

design for the bridge evolved, as Probert explains. "Once the shape of the bridge was decided on and once we'd decided to share the alcove with the forward turbolift, then I think the design stayed pretty much as it was. His couch is actually a bed and I provided the concept that if he were to feel more comfortable staying near the bridge during extreme circumstances, he could roll that couch out to make a bed. In fact they built it that way, if you went to the other side of that set, you could see the remaining part of the couch protruding through the set wall. It was on rollers so it was designed to roll right into his office and create a bed. That never got used. In terms of his bathroom, they ended up having the doors open

▲ One wall of the briefing lounge featured a display of gold models of ships named *Enterprise*, including the new *Enterprise* NCC-1701-D.





▲ The captain's ready room was a new addition, not previously seen on earlier versions of the ship.

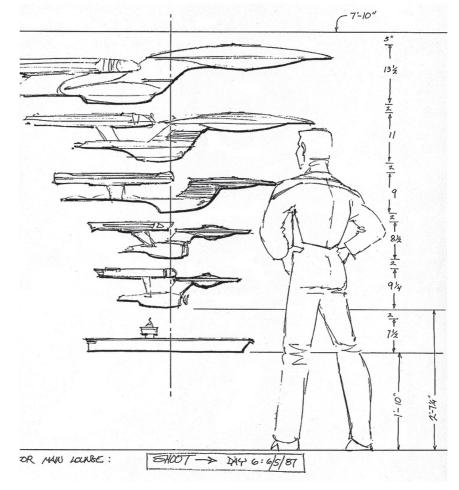
A design drawing showing how the *Enterprise* models in the briefing lounge might appear.

continuously and then they put a food replicator inside it. I think maybe he washed his hands in there at one point."

### **ART DIRECTOR**

By early 1987, Herman Zimmerman had joined the production as Art Director. Zimmerman immediately recognized Probert's knowledge of and love for *STAR TREK* and encouraged him to build on his design work for the bridge area, and to submit designs for other areas of the ship.

Unlike the bridge, conference lounge and ready room sets, which were all completely new for the series, and had eaten up a large portion of the available budget, the remaining standing sets

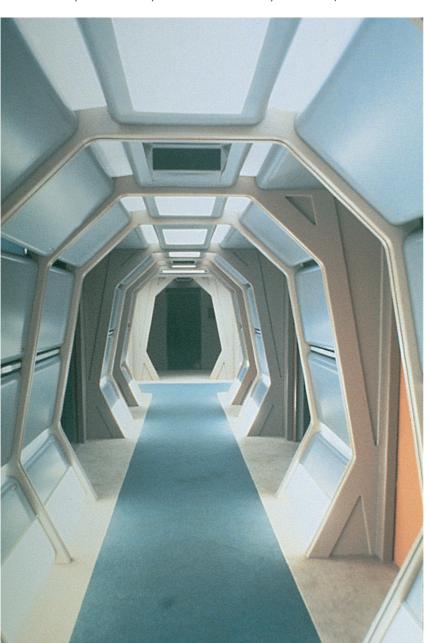


would need to be adapted from the existing sets constructed for the *STAR TREK* movies. Although the sets themselves could be adapted to look quite different, their layout remained the same. This meant that the existing lighting rigs could be utilized, a major cost saving as changes would have been very expensive.

"We couldn't have afforded the quality of the sets we had from the very beginning had we not used some of the stock units from STAR TREK: THE MOTION PICTURE and the other three features that had been produced before THE NEXT GENERATION came along," explains Zimmerman. "The sets were modified very dramatically in all cases. In many

► Grace Lee Whitney poses in an Enterprise corridor during the making of STAR TREK: THE MOTION PICTURE.

▼ Like many of the TNG Enterprise sets, a corridor from STAR TREK: THE MOTION PICTURE is re-purposed for the Enterprise-D.





cases it was only the floor plan that was saved so that we didn't have to move the scaffolding for the lighting of the sets; that was particularly true in the sickbay and the engineering section and the corridors surrounding that, and the turbolifts. Certainly we redesigned the turbolifts and we redesigned all the doors, but we retained all the metallic panels that had originally been built for STAR TREK: THE MOTION PICTURE. They were in bad shape, so instead of using them as natural aluminum, which they were in that picture, we repainted them a metallic color; necessarily, because they were just all scratched and beat up by then."

### **ENGINEERING**

Aside from the bridge, the other major set for the new *Enterprise* was engineering. This would be based around the existing engineering set built for *STAR TREK: THE MOTION PICTURE*, as Zimmerman explains. "The size and shape of the engine room



was identical because there were steel structures holding up the second level that we didn't want to rebuild. We literally built around that and used the level floor that was there. What we did do was dig down a little further into the ground, because, frankly, the engine from *TMP* had been placed on plywood that was sitting directly on raw dirt. When they did the movie – as with most motion pictures – they never assumed that it would still be in use 15 or 16 years later. We leveled the floor and put a concrete pad down there to set our engine on, because our engine was going to be two-and-a-half stories above the stage and a half-storey below the stage; the only way to accomplish that safely was to pour a concrete foundation.

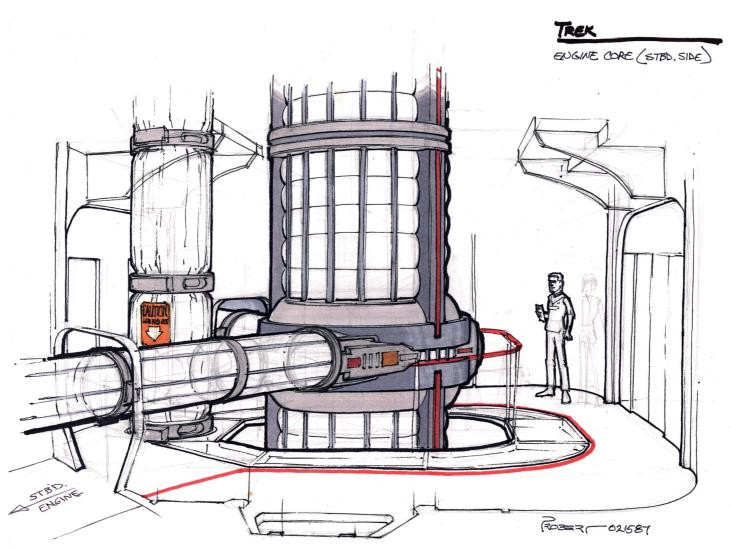
"The engine (warp core) itself was absolutely

brand new, and Geordi's office was brand new. The engineering corridors were all manipulated from pieces left over from the corridors from *TMP* but done in such a way that you would not identify them at all."

A significant change from *TMP* was that the new warp core for the *TNG* set was vertical, whereas in the movie it had been horizontal. "It was an entirely different concept for the warp drive that was done for *TMP*," says Zimmerman. "I don't think anybody really figured it out. It was mostly a long power tube that continued on to a painted backing, so you could really only view it from one angle.

"The engine itself was absolutely brand new, and Geordi's office was brand new. The

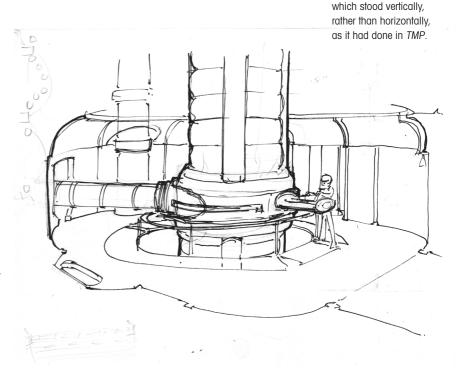
▲ A design drawing by Rick Sternbach depicts the upper level of engineering and one of the rarely seen lifts.



engineering corridors were all manipulated from pieces left over from the corridors in *TMP*, but done in such a way that you would not identify them at all."

### **WARP CORE INNOVATION**

"Their warp core was quite a bit different," recalls Probert. "We were very concerned about showing exactly how the dilithium crystals came into play. So, working in concert with Rick Sternbach, who has a very good technical mind, we came up with the concept that there would be these huge deuterium tanks above engineering and an antimatter generator of some sort at the very bottom of the ship; each would have an injector, which would fire their respective components toward the dilithium crystal chamber, which is what you see in engineering. The crystal would focus that power and send it down two conduits toward each engine. Herman wanted to move beyond TMP; there were going to be some changes."



▲▼A new warp core was constructed for *TNG*,



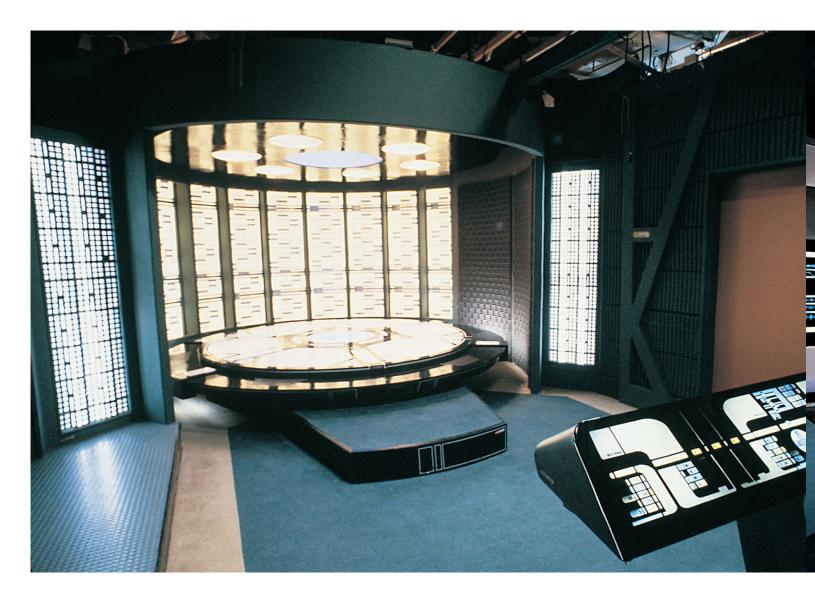
▲ The warp core was partly constructed using a mold originally created for the roof of the turbolifts.

Although the warp core was brand new, it was partly constructed by using a mold made for the new turbolifts. "Andy had created the interior of the turbolift with a beehive ceiling," explains Zimmerman. "The rough dome shape was quite interesting, but in point of fact, unless you put a camera on the floor and looked up the actor's nose, which is not very flattering, you would not see that ceiling. Regardless of that, we did build the mold and made that complicated ceiling, which I'm not sure was ever seen on the series in its totality. However, I used the same mold and used the outside of the dome, rather than the inside, to create the top and bottom halves of the crucible of the warp engine. So the design for the ceiling could have been much simpler in the turbolifts but the exterior of the warp engine would not look as good as it did had we not gone through that exercise."

### **PLEXIGLAS**

Andy Probert also contributed the design of the transparent shields and walkways that surrounded the warp core, as Zimmerman explains. "The Plexiglas border around the engineering deck and the deck above it were ideas that Andy liked and we did our best to make happen. Plexiglas is not very strong, so it had to be three-quarters-of-aninch thick. We used it successfully on a number of occasions.

"I remember Worf has a fight with a Klingon in a first season episode ('Heart of Glory'). The director of photography actually put a camera underneath the glass of the second floor so we saw the Klingon's body through the floor. It hit the floor and then cracked the glass. The crack was done in post-production; it was quite a stunning shot. We wouldn't have been able to do it without that concept."



### LIFT OFF

Although rarely used after the first episode of *TNG*, the engineering set also included two lifts. "In the pilot, in almost the very first scene that we saw Picard, he was in engineering and he came down from the second level," recalls Zimmerman. "We used a forklift to do that. Any kind of lifts on stage are very costly because you have to dig into the stage floor and put the mechanism in.

"If you were building a starship, yes, you would use that lift every moment of every day, but because we're telling stories for enlightenment and entertainment on a television program, we are using those things only when it's dramatically necessary."

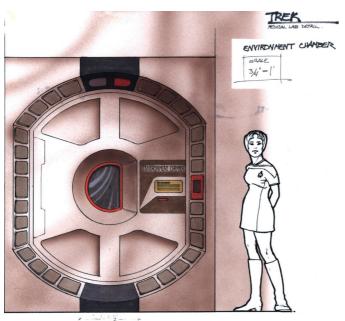
The transporter room remained quite faithful to the movie version, although an earlier idea of locating it adjacent to the bridge was eventually abandoned. "The basic transporter unit, the

▲ The transporter room was another set that had originally been built for the STAR TREK movies, but was adapted for TNG. A step down from the pad was added, and the console was brought into the main room, as it had been in TOS.

ceiling, the floor, and the back walls were certainly the same," confirms Zimmerman. "It occupied the same square footage, but we redid the walls beyond the transporter itself, and of course we freshened it; we put a step down from it. I don't know quite how they did it before – there was no step to get off of it!"

However, Andy Probert instigated one major change to the design of the new transporter room, making the layout closer to how it had appeared in TOS. "I had always been uncomfortable with TMP's idea of having to place the operators in a booth. I wanted to soften the differences between the original show and TNG, so I asked Herman to redo the set back toward the original show. That meant taking that skinny little door by the operator and moving it forward and also taking the operator's station and moving it forward."





▲ Although Probert submitted several new designs for sickbay, ultimately the movie version was re-used with a small amount of updating and refurbishment.

◆ Probert was keen to make a connection with the sickbay from TOS, and sketched a design for a new decompression chamber.

### **BATTLE BRIDGE**

A feature of the new *Enterprise*, which would be revealed in the opening episode of the series, was the ships ability to separate the saucer section from stardrive section. The idea being that if shipto-ship conflict arose, the saucer section could withdraw, carrying non-essential crew and civilians to safety whilst the stardrive section engaged the enemy. This meant that a set for a second bridge – or battle bridge – located in the stardrive section was required.

Zimmerman's initial idea was to construct something using old parts of Klingon ships. However, it was felt that this would not be in keeping with the overall look and feel of a Federation starship, and it was rejected by Bob Justman. Zimmerman and Probert then decided to adapt the existing *Enterprise* bridge set used in the movies.

For the sickbay set, Andy Probert submitted

several design ideas to Zimmerman, many of which were intended to be an evolution of the *Enterprise* sickbay in the *TOS*. One of these was the decompression chamber, which had been part of Dr. McCoy's lab.

Ultimately though, only cosmetic changes were made to the existing movie set. "We didn't improve sickbay right away," says Zimmerman. "We built some new beds and a ceiling piece. What we inherited was a space bar that had been converted into a sickbay. We just used the space and rebuilt a lot of it."

### **HOLODECK**

The holodeck was a new feature of the *Enterprise* that hadn't featured in *TOS* or the movies, although a 'recreation room' with similar properties had appeared in an episode of *STAR TREK: THE ANIMATED SERIES*. As the nature of the holodeck was that it was able to create different environments, no permanent standing set was required. However, it was felt that some kind of control station would be required. "We were sitting around in this concept meeting and talking about how the holodeck worked," recalls Andy Probert. "My thinking was, 'You go into this room and the







■ A single set for the crew quarters could be adapted to suit the different characters and their ranks. Seen here are the captain's quarters, which were the largest and used the full set. up a curved section of the ship into five bays. If you were a minor officer you might get one bay, which was simply a bedroom; if you were a junior officer you might get two bays – a living room and a bedroom; if you were the first officer or the counselor you might get more; the captain obviously had all five – he had a bedroom at either end, a living room in the center; one bedroom might even have a bath off it."

### **LONG LASTING**

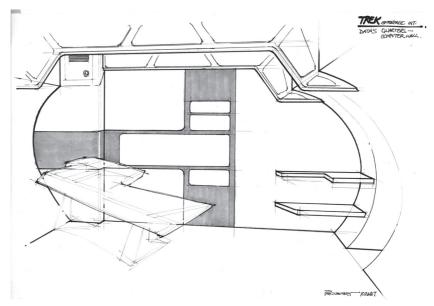
Inevitably, a degree of compromise played a part in the designing of so many standing sets at the start of the series, and not everything could be achieved immediately. However, space was as much a factor in this as budget, as Zimmerman reveals. "We ran out of stage space for a lot of things. The cargo bay should have been much bigger; it should have had a second floor. There was nothing to do about it; there was just no more space to use for permanent sets. We needed all of Stage 16 for swing sets for large planet exteriors, which we did a lot of in the first two years."

After the launch of *TNG*, and as time went by, all of the standing sets were revised and updated. Even after the *Enterprise-D* made its final appearance in the movie *STAR TREK GENERATIONS*, the standing sets continued to have a life, being adapted to serve as parts of Captain Janeway's ship in *STAR TREK: VOYAGER*.

walls totally dissolve into an environment. How do you find the door?' I came up with this unobtrusive arch; you know the door is on the other side of it, and we could build the holodeck controls into it so you could either operate them as you walked through, or you could pop them off the wall and carry them around. The arch was built and actually put in place, then, almost at the same time, they came up with the idea of a voice command that would make the door visible, so the arch was really unnecessary. It was a brilliant concept; the only thing we added was some way to split it, so that we could transport it easily to the location. The woodland we used in the pilot was in Griffith Park in Los Angeles."

Although not heavily featured in 'Encounter at Farpoint', future scripts would require sets for the crews quarters. Rather than build individual sets for each crew member, Zimmerman designed a single set that could be adapted and dressed as needed. "All the quarters were done in the same location," explains Zimmerman. "I divided

▼A design sketch showing how Data's quarters, with a computer wall, might appear.



## STAR TREK



