Federation Tug

Type: Towing Vessel

Launched: 24th C

Length: 90 Meters

Max Speed: Warp 6
FEDERATION TUG

SPECIFICATION

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<thead>
<tr>
<th>TYPE</th>
<th>TOWING VESSEL</th>
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<tbody>
<tr>
<td>AFFILIATION</td>
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<tr>
<td>LAUNCHED</td>
<td>24TH CENTURY</td>
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<tr>
<td>LENGTH (METERS)</td>
<td>90 METERS (APPROX.)</td>
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<tr>
<td>CREW</td>
<td>600</td>
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Stand assembly:

Attach the stand to the back of the rollbars.

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The Federation tug was used in the 24th century to tow stranded vessels back to repair facilities or junkyards. It was designed to be able to remove partly detached parts, or hold them back in place with its mechanical arms, making a stranded ship secure for towing. Its powerful tractor beams could then pull the vessel to safety.

The Federation Tug was an odd looking ship, but it was built from a purely practical point of view. It was designed to be able to remove partly detached parts, or twist them back in place with its mechanical arms, making a stranded ship secure for towing. Its powerful tractor beams could then pull the vessel to safety. Its powerful tractor beams could then pull the vessel to safety.

SHIP PROFILE
A Federation tug was a small warp-powered ship used for towing inoperable or severely damaged starships to a suitable place where they could be restored to full working order. It was used by the Federation and Starfleet in the 24th century, and ships of this type operated out of starbases and orbital ship building facilities. The Federation tug was approximately 90 meters in length, and operated by a small crew of engineering specialists. It was capable of low-to-mid warp speeds, and was equipped with powerful twin tractor beams capable of towing large vessels over considerable distances. It also possessed long mechanical arms, which could be used to clamp onto damaged or loose parts and put them clear to secure a ship ready for towing.

DEEP SPACE RESCUE
A Starfleet ship was capable of using its tractor beam to tow another vessel, but normally only at sublight speeds for safety reasons. A specialized tug could perform the task at warp speeds, meaning it could retrieve a stranded ship that was light years from a starbase. The tug could also be used to haul large components to space stations, and its repair crew could fit these parts.

In 2364, the U.S.S. Enterprise NCC-1701-D requested that a tug be sent to tow the wrecked hulk of the U.S.S. Stargazer NCC-2893 back to Xendi Starbase 9 after it had been found adrift by the Ferengi. Federation tugs were more widely used during the Dominion War when countless ships were disabled by Jem'Hadar forces. In 2374, the U.S.S. Frederickson NCC-42111 was seen being towed away by a Federation tug from a battle zone after the Second Fleet were forced to retreat in the early weeks of the Dominion War.
In the 23rd century, Ptolemy-class ships were used as tugs. This type of ship only ever appeared on display graphics of a Starfleet Academy bridge simulation in STAR TREK II: THE WRATH OF KHAN and STAR TREK III: THE SEARCH FOR SPOCK. In truth, the Ptolemy class was more like a transport ship. It featured the saucer section of a Constitution-class vessel, while at the base of the connecting neck was a port that could accept a variety of differently shaped transport containers.

DATA FEED

In 2370, when the Enterprise-D suffered a series of engine problems caused by interphasic organisms, Vice Admiral Nakamura suggested that he could send a tow ship to bring the Enterprise-D to Starbase 84, where Captain Picard was due to attend a banquet. Without the Federation tugs, which saved numerous ships like the Fredrickson, it was very possible that Starfleet might have run out of vessels with which to fight the Dominion during the war’s early days.
In order to illustrate just how badly the Dominion War was going for the Federation and its Allies, the script for the STAR TREK: DEEP SPACE NINE episode ‘A Time to Stand’ called for a fleet of battle-damaged ships to be seen limping back from the front lines.

The forlorn sight of the battered fleet retreating from battle was something that was much easier to say than to film, particularly in the days before CG ships had happened a little earlier. ‘A Time to Stand’ was one of the last episodes that still used physical studio models when filming.

In order to have enough battle-scarred ships for the scene, the visual effects team had to build some extra models. There was no way that they were going to inflict damage to existing studio models, which had been expensively assembled, so they decided to ‘kitbash’ some ships.

This approach saw them take parts from various existing commercially available scale model kits from the likes of AMT/Ertl, and combine them in unusual ways to create new models. Some of the vessels were put together from several different model kits, often of different scale, and sometimes they included parts from kits that weren’t even STAR TREK related.

Many of the people in the visual effects department and art department worked on creating these models, including visual effects producer Dan Curry, visual effects supervisors Gary Hutzel and Adam Buckner and visual effects coordinator Judy Elkins.

Most of the ‘kitbashed’ ships were built in just a few hours, according to Dan Curry, so they did appear a bit rough and ready. The quality of the models was good enough, however, for the brief scene in which they appeared, and they lack of fit and finish could be mitigated by the way they were filmed.

One of the ships that really sold the idea that the fleet had recently taken a beating from the Jem’Hadar was the Federation Tug. Nothing said that they were returning with their tails between their legs quite like having an Excelsior-class being towed back to safety.

It was Judy Elkins who built the Federation Tug, one of the few utility vessels that have appeared on screen in STAR TREK. At this point, more than 20 years after the episode was made, no-one can quite remember just what parts were used for the Federation Tug, which was affectionately referred to as the U.S.S. Ertl among those who built these ‘kitbashed’ ships.

It certainly looked like Elkins used the nacelles from a Romulan warbird model and the nacelle pylons from a U.S.S. Voyager kit in the construction of the Tug. There also seemed to be a roll bar from a runabout model, while the mechanical arms at the front appeared to be from a ROBOTIX Lunar Explorer Vehicle building set. Dan Curry also believed that parts from a vehicle taken from Tonka’s Legions of Power set were used.

Among the other ships that were built for the opening scenes of ‘A Time to Stand’ were the U.S.S. Curry NCC-42254, the U.S.S. Raging Queen NCC-42284, the U.S.S. Centaur NCC-42043 and the U.S.S. Elkins NCC-74121 – the latter ship, not surprisingly, was also built by Judy Elkins.

Whatever parts were used to build the Federation Tug, it was certainly effective in reinforcing the idea that the war was not going well for the Federation, and it provided another type of vessel that had never been seen before.

The Federation Tug was constructed by visual effects coordinator Judy Elkins, who used various parts from several different toy model kits. The Tug studio model used parts from various model kits, including a Romulan warbird, a runabout and the nacelle pylons from a U.S.S. Voyager kit. The quality of the model may have been a little crude, but it was never intended that it would be seen in much detail.
CREATING THE SHIP

Making a weekly TV show like STAR TREK is an extremely expensive and time-consuming operation, and any time that there was an opportunity to reuse a set, a prop or a model, it was taken.

When the script for the STAR TREK: DEEP SPACE NINE episode ‘A Time to Stand’ called for a Dominion ketracel-white processing facility, concept illustrator John Eaves knew just what to do. He had already designed and built a model of a Dominion prison (Internment Camp 371) situated on an asteroid for the episode ‘In Purgatory’s Shadow,’ and it made sense to use the model again as the starting point for the ketracel-white facility.

“I knew that we could rotate the model of the asteroid I had constructed previously that featured the Dominion prison facility on it,” said Eaves. “That way, when it was turned and filmed from the other side, the surface detail changed and it looked like a whole new asteroid.”

DISTINGUISHING FEATURE

Once the location of the ketracel-white plant had been settled on, Eaves set about designing the actual facility. “Someone had brought in these postage stamps to work that featured the U.S. Air Force Academy Cadet Chapel from Colorado Springs, Colorado,” said Eaves. “The building is like a cross between the Sydney Opera House and a bunch of arrowheads all lined up, and I thought it was a neat bit of architecture. I pitched the idea of doing something similar, but throwing in some science-fiction elements to it, and my boss Herman Zimmerman told me to go for it. We really didn’t have that much reference to go on when it came to Dominion design; there were a couple of Jem’Hadar ships and some costumes, but other than that it was really an open field.”

While Eaves designed a facility that sat on the surface of the asteroid, he also added docking points and defensive shields that jutted out of the asteroid, making it clear that the processing plant extended beneath and into the asteroid. This also made sense in terms of the story, as it was intended that some scenes would be shot inside the facility, showing that it was clearly underground in some caves.

“We were originally going to build the processing plant inside a crater,” said Eaves. “But it occurred to us that we had all these cave sets that were permanent for the entire run of the show. Therefore, anything we could do that featured a cave would save a lot of money, as the set was already built. Having the facility extend deep inside the asteroid made it a much more affordable set to shoot. Anytime we could exploit those cave sets, it worked out great and that’s why we went in the direction of putting the ketracel-white facility inside the asteroid.”

DESIGNING THE KETRACEL-WHITE FACILITY

Illustrator John Eaves designed the Dominion’s ketracel-white facility, which he placed inside an asteroid that he had previously built. 

Apart from the main ketracel-white processing plant, Eaves also came up with these shield generators that were positioned all around the asteroid.

Another of Eaves’ sketches showed some of the elements in more detail, such as these docking spires that extended back inside the asteroid.
DOUG DREXLER: SCENIC ARTIST

Doug Drexler looks back on his time in the DS9 scenic art department, where he designed languages, logos and computer displays.

Few people would happily abandon a career that had won them an Oscar and take a job where they were a complete novice. But, that’s exactly what Doug Drexler did when he gave up his place in THE NEXT GENERATION makeup department and moved over to the DEEP SPACE 9’s scenic art department.

“I have to admit that it gave me a certain comfort out of totally shaking up my world,” said Drexler. “I like to put myself in a position where it’s OK to be stupid. If you do makeup for 10 years and you start to get some notoriety for it, you’re expected to know a lot, and that always made me uncomfortable. I would much rather start something new and go to work where they say, ‘Well, you have an excuse for not knowing this!’”

In the simplest terms, Drexler’s change of career involved dreaming up the look of the future, both for Starfleet and for all the alien races Deep Space 9’s crew would encounter.

“The basic duties were designing alien languages, spaceship interfaces, control panels, maps, signage on the ship and on the station,” said Drexler. “I had to do a lot of great symbols; I did lots of logos. I literally did thousands of designs over seven years.”

HELPING THE BOSS

The scenic art department was headed by Michael Okuda, under the supervision of DS9’s production designer Herman Zimmerman. Drexler was assigned exclusively to DS9, but at the time Mike Okuda was also responsible for the scenic art on TNG, and later on STAR TREK: VOYAGER. As Drexler explained, this meant that Okuda had relatively little opportunity to get his own hands dirty and his team had to work quickly and efficiently under his general guidance.

“Mike is a true artist, but when he was doing two shows, it was harder for him to do as much hands-on stuff as he would have wanted,” said Drexler. “Basically, Mike would tell us what the job was that needed to be done. After a couple of years, people just knew whose responsibility it was to do what. Mike knew us and trusted us. If I had a question or I thought I wasn’t clear on the concept, I would go to him and he would call a writer, or something like that. He always watched over me and we got to be very close. He knew what I could do, and he trusted me.”

SENSE OF REALITY

For Drexler, the absolute best job was designing and laying out the consoles on a starship bridge.

“In STAR TREK GENERATIONS, the actors who played Captain Harriman and Sulu’s daughter both wanted to talk about the consoles on the ship, its motive power, and the logic behind them. Mike and I went down and spent about 40 hours doing that type of stuff.”

Doug Drexler, seen here posing with the models created for ‘Trials and Tribble-ations,’ has had an extraordinarily varied career. He won an Oscar for his makeup work on Dick Tracy before joining TNG, and then switched to the art department on DS9.

One of Drexler’s great specialties was designing the various technical cutaways that were at the back of every Starfleet bridge. This one shows the layout of the Defiant, and Drexler always took the time to think things out and put everything in a logical place.
Drexler also helped to design the bridge consoles on the Enterprise-B for the movie GENERATIONS. He spent time with the actors offering advice on how to convincingly operate them and to design the bridge consoles and labeling the controls on the Defiant. For example, in addition to designing all the backlit displays and logos, they were responsible for detailing sets once they had been built.

"Believe it or not, as a scenic artist you could go down to a set with a box of different widths of tape, and in an hour you could use the tape to add $10,000 to $20,000 worth of value to it," said Drexler. "You could do all kinds of panels on the walls, you could dress up a cabinet and make it look a little more futuristic, all with just some tape."

Despite the advances in technology, Drexler said the scenic art department never abandoned some distinctly low-tech approaches to their job. For example, in addition to designing all the backlit displays and logos, they were responsible for detailing sets once they had been built. Drexler readily admitted that this was a part of the job he embraced with enthusiasm. "I remember we had a crashed runabout on stage," said Drexler. "They built about a third of the ship plowed into the ground. It was huge. Herman, feeling guilty about it, took me down to the stage, "I said, "You don't have to press them, you can slide them too.' In the movie, she did a thing where she slid her hand across something; his hands would dance."

During this time, the technology advanced considerably, much to Drexler's relief. "The Earth defense map for 'Paradise Lost' was the first STAR TREK backlit graphic that was created purely in the computer," said Drexler. "Up until that point, the computer," said Drexler. "Up until that point, we were only able to design the graphic in the computer in black and white. From here, we would print it out full size (55" x 28") on our 8.5" x 11" stone-age laser jet in as many pieces as it would take to get the whole thing. Then we'd piece those together on a big board with spray glue and send that to the photo stat house, where they would shoot a full-sized film of it."

HOURS OF WORK
"That would come back to us and the real fun would begin. On the backside of the film we would spray-glue individual handcut pieces of lighting gels to add the appropriate color. Once this tedious process was completed (and it could take hours of gluing), we would spray-glue yet another layer. This was the diffusion layer which would allow the light to illuminate the graphic evenly. Without the diffusion, you would see the fluorescent tubes that our effects department placed inside the console to provide light. We used to joke that no matter where you went in the Galaxy, no matter how advanced the technology, it all boiled down to fluorescent tubes. Later, we designed the entire thing in the computer, right down to the lovely gradients, copied the whole thing onto a disk, and walked it over to the Paramount Sign Shop, which printed it out on their giant inkjet printer."

FLYING COACH
"I said, 'Look, this thing is just a piece of Plexiglas with lights behind; you're going to make it fly. if the people at home watch you pressing the buttons, they looked futuristic; they were based on 20th-century designs.

ANCIENT INSPIRATION
"I found a terrific book," said Drexler. "It was the 'Hammond Concise Atlas of World History'; it's full of maps charting things like the Germanic and Anglo-Saxon invasions of Britain. It was an invaluable source of inspiration that lent a sense of reality to the rhythm of the graphic."

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On other occasions, the details on the sets weren’t quite right and had to be fixed in a hurry. In the Julian Bashir, secret agent episode (“Our Man Bashir”), they were just about to shoot a scene in Dr. Noah’s lair,” recalled Drexler. “It was supposed to be high in the Himalayas when someone looked out the window and said, ‘Hey! The mountains are green! There’s no snow! Call someone from the art department, quick!’ When I got down to the stage, I looked up and up and up, the area that would have to be repainted was about 35 feet above the stage floor. Up I went, wondering what I was doing, with the entire cast and crew watching and making playfully smart remarks. I loved it; production was holding and only I could rescue them.”

GOING THE EXTRA MILE

Drexler’s duties also involved constructing the contents of some of the practical access hatches that the crew pulled open to repair or examine 24th-century technology.

“Nine times out of 10, if I had a panel that someone was going to open up, I’d go out of my way to add really interesting things in there – polar motion, so there’d be movement, and chips that you could pull out, that sort of thing,” said Drexler. “Sometimes, the director just shot the actor and never once showed what was on the inside. They didn’t always go, ‘Wow, look at this flashy panel.’ “I’d always been a believer that it was a science-fiction show and that there were a good number of people who were watching just for the wonder of it all, and they wanted to see something that was heightened. I understood that they were trying to play it as if it was today and that the science-fiction part was the background, but once in a while you’d have to come out of the closet and say, ‘Goddamn it, I’m a science-fiction show, look at me!’”

SENSE OF REALITY

“STAR TREK generally used that stuff as wallpaper, but Mike Okuda and Rick Sternbach had given the show a technical continuity, and they’d worked hard to do it. And if people didn’t buy that stuff, I didn’t believe they were going to buy the drama. There were people who had injected a certain life into the show, and there was a part of them in it. I’m afraid that was often underestimated: on a show like STAR TREK: DEEP SPACE NINE, of its eye. They wanted to use CGI but it didn’t match the look of the models yet. The models had the feel that if you hit them with a hammer they would clang. Then CGI had gotten to the point where you could mix shots of models with CGI. I understood that we were trying to play it as if it was today and that the science-fiction part was the background, but once in a while you’d have to come out of the closet and say, ‘Goddamn it, I’m a science-fiction show, look at me!’”

EFFECTS REVOLUTION

“While I’d been doing scenic art, we’d worked very closely with a lot of different departments, particularly with the visual effects people. Sometimes we would detail models at the last minute; there were times when we actually built little foreground miniatures and stuff like that. Usually, it was a last-minute request, where you couldn’t go through the normal channels and get the model shop to build something. We would all just pitch in and do it.”

LEARNING A NEW SKILL

“I knew there was ‘LightWave’ software in Mike’s office, and I knew this was the program of choice for TV visual effects,” said Drexler. “Once again, Mike did me another great favor. First he hired me and then let me use his LightWave. So I spent about six months doing LightWave stuff and I was incorporating it into stuff on the show.”

When DS9 finally finished, Drexler was offered a job at Foundation Imaging. So, seven years after he’d joined the art department, he turned his world upside down again and moved out to their office in Valencia, California. He loved his new job, but he still had fond memories of working on DS9.

“As always, Drexler wasn’t satisfied watching from the sidelines, and he decided to teach himself how to make CG models.

“ ’I really enjoyed the scenic art and got to do a lot of great illustrations, but the thing I remember most was my relationships with my friends there,” said Drexler. ’That was a great art department, it set decorator Laura Richard or one of her boys saw something on stage that needed our attention, they would give us a call. In movies, people didn’t look out for you, because they figured they would never see you again. But when you work on a TV series for that long you start to look out for each other. Everybody made sure the job was done.’

Towards the end of his time in the art department, Drexler started building computer models. He created this detailed scene of the Defiant’s shuttlebay, which was glimpsed when a shuttle was launched in the episode ‘The Sound of Her Voice.’
**Key Appearance**

**VULCAN T’PAU**

In ‘A Time to Stand,’ when Captain Sisko hears that only 14 ships out of 112 from the Seventh Fleet made it back from battle, he slammed his fist into a table making its glass surface shatter. This breakage was not actually scripted in the screenplay, but was the result of actor Avery Brooks hitting the desk far harder than he intended. The producers decided to use this take in the final episode as it underlined just how frustrated Sisko was at the Federation losing several battles to the Dominion.

**Appearance:** A TIME TO STAND (DS9)

**Designed By:** Judy Elkins

**ON SCREEN**

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