cinefex

A New Enterprise

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After 40 years, six television series and ten motion pictures, Gene Roddenberry's *Star Trek* had appeared to run out of steam when Paramount Pictures turned to writer, director and producer J.J. Abrams — a prolific television series creator, recently turned feature filmmaker — to revitalize its flagship science fiction franchise. Abrams teamed with producing partners Damon Lindelof and Bryan Burk, and with screenwriters Roberto Orci and Alex Kurtzman, to provide a new take on the *Star Trek* universe. "I wanted to respect what had come before," asserted Abrams. ➢➢➢

"That was critically important to me. But I didn't want to be paralyzed by it, creatively. I was very fortunate that Roberto Orci, one of my writers, was a huge *Trek* fan. He made sure our story honored the series' legacy. At the same time, I felt the movie had to work on a more urgent, visceral level as a stand-alone entity."

The new film — titled simply *Star Trek* — explored the origins of starship Captain James T. Kirk (Chris Pine), his Vulcan science officer Spock (Zachary Quinto) and their crew. The young officers are thrown into their first adventure when an embittered Romulan captain, Nero (Eric Bana), uses a time-traveling spacecraft, the *Narada*, to seek out the annihilation of the United Federation of Planets and, in particular, the Vulcan race. Spectacular cosmic events ensue, including reality-shifting paradoxes, a planet-eating black hole, and the appearance of an elder Spock (Leonard Nimoy).

To prepare for the production, visual effects supervisor Roger Guyett — veteran of Abrams' debut feature, *Mission: Impossible III* — reacquainted himself with *Star Trek* history. "When I first came to Industrial Light & Magic," Guyett recalled, "John Knoll was supervising *Star Trek: First Contact*. Back then we were just entering the digital age, but they did some amazing work. In fact, the original series had an incredible history in visual effects, and I wanted to honor that, while at the same time adding new energy." Guyett reviewed all previous *Trek* features, and other space epics, and created a compilation reel of cinematic space technology. "*Star Trek* has always been based around principles of physics — a great deal has been written about the theories of what warp drive or a photon torpedo are. J.J. wanted to acknowledge that, but he didn't want his film to feel too retro. He wanted people to believe in the characters and events, which was at the heart of the original series."

Production designer Scott Chambliss — veteran of Abrams' TV drama *Felicity* — grounded the film in tangible reality by making extensive use of physical sets and locations. "We knew we'd have a lot of visual effects scenes that we could not originate on film," remarked Abrams, "but I desperately wanted this film to feel analog and real, and rooted in an emotional reality. Wherever possible, we found practical locations that we could either dress or use visual effects to enhance."

The filmmakers planned set construction on the Paramount lot and used locations in Utah, Alaska and Southern California. The *USS Enterprise* engineering levels were filmed at the Anheuser-Busch Budweiser brewery in Van Nuys, which allowed lengthy tracking shots through labyrinthine industrial interiors. Chambliss brainstormed production designs with teams of artists — Ryan Church and James Clyne leading ships and environments, Neville Page leading creatures — while previsualization lead David Dozoretz at Persistence of Vision and artists at The Third Floor generated animatics.

A focus of the production was the depiction of the *Enterprise*, configured to predate Walter Jeffries' 1965 design. "The idea was to make the *Enterprise* the ship that the casual viewer would recognize at first glance," said Abrams. "Those who were more familiar with the series would then see that there were significant differences. I wanted the ship to have a slightly more powerful quality, which is why we made the nacelles larger. But mostly I wanted to retain the spirit of what Roddenberry had created and apply it to the context of modern technology." Abrams considered the possibility of building the *Enterprise* as a practical miniature. "I still own the first *Cinefex* with images of the *Enterprise* in dry dock. I loved those models; and the idea of being on a set filled with atmosphere and little fiber optic floodlights was so romantic. But the reality of what is possible now digitally would have made that a vanity choice. We would have been doing something for the wrong reasons."

As the *Enterprise* design took shape, ILM CG supervisor Tom Fejes oversaw construction of a highly detailed digital starship. "J.J. gave us the reins," stated ILM art director Alex Jaeger. "He said, 'You guys have been building this ship for two decades — add what you need to make it feel real.' I had to walk the fine line between continuing what Scott Chambliss had set up for this chic, 1960s look and J.J.'s desire to see a tactile, functional ship." The reconfigured ship was a larger vessel than previous manifestations — approximately 1,200-feet-long compared to the 947-foot ship of the original series. "Once we got the ship built and started putting it in environments, it felt too small. The shuttle bay gave us a clear relative scale — shuttlecraft initially appeared much bigger than we had imagined — so we bumped up the *Enterprise* scale, which gave her a grander feel and allowed us to include more detail."

Digital model supervisor Bruce Holcomb and his team modeled the *Enterprise* and its internal mechanisms for an early scene of the ship under construction. "Once we had the silhouette of the ship," said Roger Guyett, "we disassembled it and worked out the most commonsensical way to put it all together.
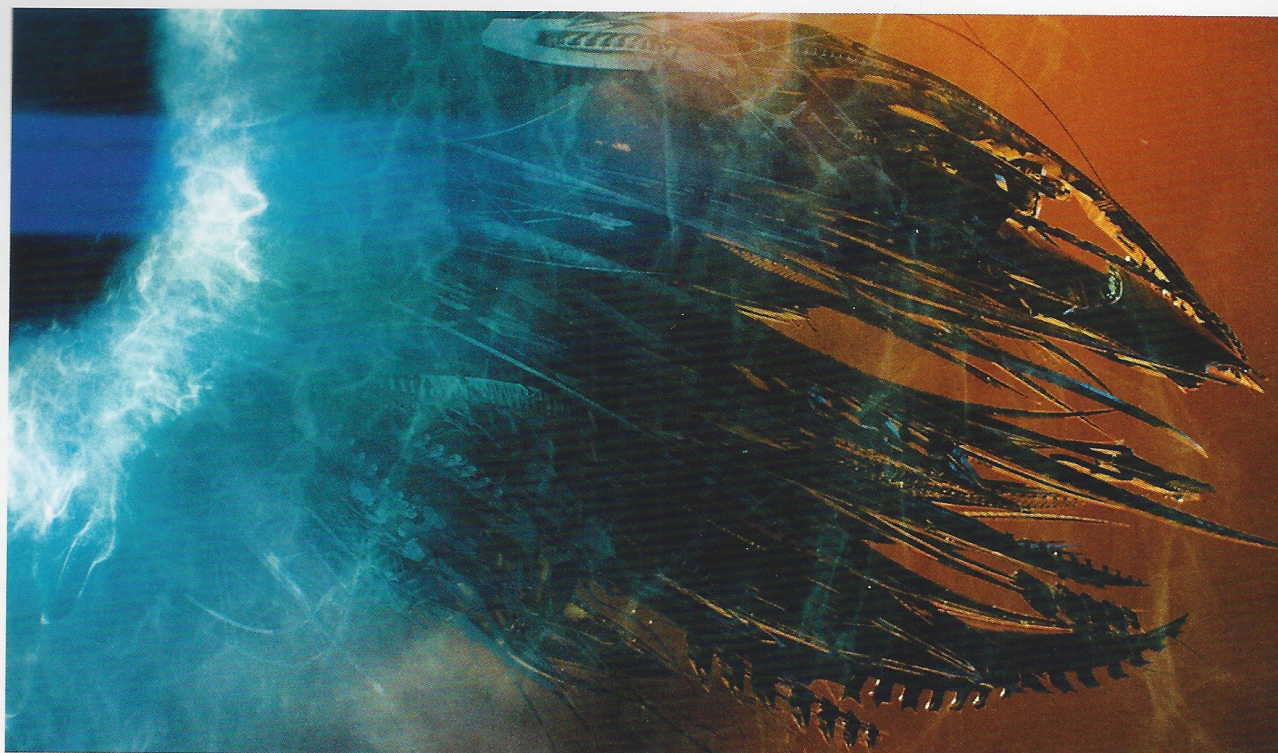
Viewpaint supervisor Ron Woodall textured surfaces with interference paint schemes that reacted to light in certain ways, which was a technique used on the practical model for the first feature film."

The *Enterprise*'s new features included an array of guns that emerged from the saucer section and a mechanical configuration that cued the ship's jump to warp speed. "In the typical warp effect, lights get brighter and then the *Enterprise* rubberbands off into space," commented Alex Jaeger. "J.J. wanted the ship to physically change its shape, from cruise to warp mode. We went through a lot of iterations to explore how much the *Enterprise* could change; but, in the end, we limited it to a couple of panels on the backs of the nacelles popping out, and the deflector dish opening up with its center piece mechanically protruding."

The navigational deflector — a circular sensor array on the front of the secondary hull — was painted the same color as the ship for the first time in *Trek* history. "The original deflector dish had a copper finish," noted Jaeger. "In later shows, it had an orange glow. We tried an orange glow on ours, but it looked out of place. It was the same with the nacelle caps: originally, we imagined what these could look like based on

their description in *Star Trek* lore. We did a few versions of a translucent bubble filled with static electricity, to hint at the kind of motion they had in the old 1960s model, but J.J. thought it looked too 'magical' — he wanted it to feel physical. So we dumped that idea and kept the nacelle caps dark, with a little blue glow that ramped up when they went to warp. That, and the color of the deflector dish, gave the spaceship an almost monochromatic look that seemed very futuristic."

On the bridge, ILM gave the main viewscreen a makeover to enhance interactions with outer space. "A big element of our task on this movie was generating scope," commented Roger Guyett. "On the original series, the *Enterprise* bridge felt very enclosed. J.J. wanted to connect the characters more to the outside environment, so we added a panoramic window at the front of the bridge, which doubled as a heads-up display to show video while the characters were looking out into space." ILM compositing supervisor Eddie Pasquarello layered reflections and elements into the viewer/window, and added motion graphics to other transparent screens around the deck.

The majority of screen displays on the *Enterprise* bridge were practical installations designed and operated by Oooii — motion graphics design and playback