



# Blade Runner: HIGHER DEFINITION

Director Ridley Scott recently assembled a team of experts who rescued original Blade Runner lab tapes before combining new and proven HD technologies to create Blade

**LOS ANGELES, 2019.** Flying cars. Neon lights. Animals walk among the mass of humans. Advertising for off-world-colony visits echo the streets from unknown sources. Billboards selling who-knows-what illuminate a dark city with enormously tall buildings and a vast cityscape.

Such is our near future, created by one of the most innovative directors in the world—Ridley Scott. Central to Scott's 1982 futuristic vision is a disillusioned cop—a Blade Runner. His mission, reluctant at times, is to seek out and “retire” Replicants, truly human robots, before the world, as flesh-and-blood humans know it, is destroyed.

It's a perfect mix for an iconic thriller. And the 25th anniversary of the cult picture's release is a perfect time to use today's technology to bring an “improved” version to DVD and theaters—and a new generation.

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### SO, WHERE IS IT?

The idea was to take the original negative and scan it into the digital world, transforming a few “mistakes” (without disturbing the integrity of this much-loved picture) via today’s HD technology.

The problem: Finding that negative. DALSA Digital Cinema President Rob Hummel (part of the Entertainment Effects Group [EEG] team in 1980) and Academy Award Visual Effects winner Mark Stetson (chief model-maker for *Blade Runner*) both seemed to have a nagging memory. Hummel had proposed making IPs (interpositives) for the 65mm negative.

Once the 35mm reduction prints were safely underway, production could cut the original 65mm into the lab negative for the 70mm print. The rest of the footage would be a blowup from 35mm, but the visual effects created by the film’s Academy Award nominees Douglas Trumbull and Richard Yuricich could look as good as in the screening at EEG.

With a true archivist’s thrill, Hummel carefully entered the vault at CFI and found a box of lab tapes marked for color timing from 70mm—the 1981 and 1982 prints of *Blade Runner*. The restoration team now had shots with edge numbers and aperture from the stage—instead of an optical print.



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### THE JOURNEY BEGINS

The rescued footage was shipped off to Andrew Oran at FotoKem, which offers a special Imagica scanner designed for multiple 65mm formats. The scanner initially acquired the image at 8K to capture all the detail, then reduced it to 4K to integrate with the rest of the pipeline.

"4K creates a massive burden on rendering and the entire restoration process, and some of the work had to be completed at 2K," explains restoration visual effects supervisor John Scheele. "The data gave us the detail and grain that matched the film original, but we also saw optical matte lines, dirt and other small errors that had been buried away in the 35mm reduction prints. It's like makeup in IMAX or Showscan—you can't always get away with what passes in 35mm. Thom Polizzi and Jay Warren at Technicolor put together the team that saw this through to the finish."

### A GATHERING OF MINDS

The question now became: What to fix? Scott screened the 35mm timed print from 2001 for several groups of people, including his long-time associate and DVD producer Charlie de Lauzirika, Warner post executive Kurt Galvao, restoration editor Gillian Hutshing, Scheele, Trumbull and Yurichich.

Over time, Scott had been focused on a limited number of changes that would reinforce the intent of his "Director's Cut." Several of these required finding shots that were still missing (especially the famed "unicorn" shots), reining in the color and look of some of the matte paintings, and fixing a number of sequences that always bothered him.

"The physical effects cable-wires attached to any size spinner were to be removed," recalls Yurichich. "Something we could have easily done on the matte stand if we had time and money on the original shoot. Instead, I believe Ridley cut around the shots where cables were seen."

"To my surprise, no one at the meetings saw a matte-painting double-exposure mistake I'd been carrying around in my memory bank as an 'acceptable mistake,'" Yurichich adds. "When Pris is seen about to hide at The Bradbury Building entrance during the establishing shot, a large bus enters frame, traveling left to right. A portion of the B/G matte painting double-exposes through the bus! It was quite funny. Maybe I should have said nothing to see how much longer it could have gone unnoticed!"

Trumbull and Yurichich came up with several different ideas of how to make the DVD release better. So did Scheele and others. All, however, agreed that two of the most important elements to fix were when Deckard kills Zhora and his "conversation" with the Egyptian.

### BOY, IS THE SYNC OFF!

The team decided to confront an interesting problem in a sequence where Ford's character Deckard pressures the Egyptian for information on Taffey Lewis. "Ford's mouth and lip sync are hopelessly out of place, and there was no alternative take that worked better," explains Scheele. Over time, the dialog had become sacrosanct, so removing this wasn't an option. With only mixed soundtracks, no stems or separate elements, pulling the sound apart to make the effect look better wouldn't work.

Yes, with CG animation, they could have attempted a digital head of Ford. But, in essence, that would mean replacing him,

or at least part of him. But, his expression and performance were unlikely to be matched with a digital stand-in.

The team began to cast about for a look-alike, when David Sanger, who produced the greenscreen photography at New Deal Studios, had a better idea. He'd gone to school with Ford's son Ben, who was now a master chef at a restaurant across from Imageworks.

When approached, the younger Ford, now the same age as his father when he made Blade Runner, was more than willing to pitch in. "Not an identical forehead, but his mouth and lower head are a very close match—and, of course, he knows his father

inside out," explains Scheele.

Rich Hoover directed the action at New Deal with Christian Boudman, who would direct the complex head replacement process at Imageworks, making sure there were enough angles and action. The idea was to have Ben Ford turn left, then right, and all different angles, so there would be enough overlapping material for the complicated matches. In the film, Deckard is seen through the glass of a snake terrarium and he passes in and out of subtle light changes. DP Tim Angulo worked hard to repeat the same conditions on the younger Ford.

Imageworks took different sections of his face and tracked

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along the line that worked best for the performance, using only the chin and mouth and lower face. The goal was to maintain as much of Harrison Ford's original performance as possible.

### STUNT WOMAN - PLEASE - GO AWAY!

Okay, it's no secret, Joanna Cassidy, as Zhora didn't go through the plate-glass window and run through the city, ultimately taken down by Deckard's bullets. In the film, Zhora's head flops and right away it goes to a different face. The stuntwoman doesn't begin to convey the same expression, not to mention that she has "helmet-hair," as Galvao termed it. The body worked, but the mixture of people took the audience out of the scene.

First, a stage shot was done at New Deal (formerly Chandler and then EEG). Cassidy, who volunteered to help, came in full Zhora mode, including her original leather bra. She was rigged in a special pivoting seat, spun around by the grips so that her head displacement was equivalent to the stuntwoman's original falling moment. Using a fan to blow her hair in the right direction, the team was able to mimic her "falling to her knees."

Once Hoover was satisfied with the 35mm footage, the selects were scanned at MPI (Warner's in-house facility) and delivered to Imageworks. They would use the technique perfected on *Seabiscuit* and *Charlie's Angels*. With the footage now in computer, Hoover's team went to work, sometimes mixing more than one take into each element.

### THE INFAMOUS DOVE SHOT

In the original film, the sequence where Batty dies was what Scheele calls, "a placeholder." Shot at Shepperton Studios outside of London, the background is just a sheet metal building with a cluster of pipes that were vaguely like the *Blade Runner* cityscape. To maintain as much continuity as possible, Illusion Arts rooted the dove from this shot and kept buildings at the same angle.

Original VFX supervisor David Dryer came back and shot buildings in downtown Los Angeles that he knew were a good fit. Kelvin McIlwain took the lead in creating a digital matte painting that had a similar feel to the original film.

"As with the head replacement shots, there were other digital techniques that might have yielded a more realistic look," says Scheele. "But with the project, we were keen to maintain the palette that had been in use at EEG's Matte Department. Our mandate, for the whole film, was to refine the look and correct a few long-standing issues while maintaining Ridley's great film."

### BELOVED MEMORIES

Everyone involved in this picture has his or her favorite moments. For Yuricich, it's the inventiveness of the 1980s artists. His personal favorite is the Tyrell office, when Ford does the Voight-Kampff Test on Rachel.

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explains. "The background was to show the second corporation pyramid and, at the time, the pyramid miniature wasn't ready.

"A matte painted pyramid and horizon beyond it were photographed to an 8x10 Ektachrome plate and front-projected so when photographed with the 65mm camera, an in-camera composite of a background that the three characters in the room could walk in front of would be recorded.

"Working with cinematographer Jordon Croneweth's gaffer Dick Hart, we knew that any lights needed to be off the lens axis by at least 15 percent to not flash the beam splitter on the front projection unit. We broke that rule by using four 10K lights mounted just above the projected image area outside the window, shining directly back to the camera-taking lens," Yuricich explains. A series of flags, four layers in distance, between the lights and the FPU beam splitter were hung in the camera field of view to mask light spill off the splitter.

"Black tape was a great equalizer," he comments. "We placed it on the beam splitter as a fifth layer mask. The 10K lights would be dimmed by a large ND gel lowered into the scene synchronous with the room lights being dimmed.

"The flags were matte-painted over when the background area above the actors' heads was completed with the addition of the matte painting of the sky. The sun ball was then added via Matte stand photography. Rachel needed to be rotoscoped as she passed in front of the added sun ball.

"The entire room area was also flashed up in lighting with an additional matte-painting exposure balancing the overall room lighting. Ridley added the flickering lighting in the room via lights being bounced into mirror-plex sheets.



"Could we have done any of these things differently with today's technology?" Yuricich reflects. "Of course, but adding more imagery would not have been right for this film. The new technology is great, and I love it. Often, I think that we can do anything now, but anything isn't much anymore because it has become possible to do perfect composite, animation and addition of CG imagery work without the nervousness that existed in years past.

"Please don't get me wrong, the technology is fantastic and the speed with which massive amounts of imagery can be generated is a major methodology," continues Yuricich. "However, all too often now, we hear a very relaxed 'fix it in post,' and that has taken the place of some creative thinking and careful production and art planning."

HDVP

[Bio TK?]