

# Giant Alien Robots Start Life as Sketches

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*Editor's Note: Just about every great idea still starts with a drawing on a napkin or a scrap of paper somewhere. That's something electronics will never take away from us. If we don't have a pen and a napkin, we'll draw on the bar with a wet finger. That's not to say I would refuse a rugged and flexible pocket-sized smart notepad if one were ever created.*

LOS ANGELES (AP) - Giant alien robots don't actually exist. So the dozens featured in "Transformers: Revenge of the Fallen" had to be built from the ground up. That effort took hundreds of artists, thousands of hours and even caused one computer to explode.

"We lost some machinery," visual effects supervisor Scott Farrar said with a smile. "The thing just kind of gave up."

A high-tech blockbuster, "Transformers: Revenge of the Fallen" is practically two movies in one. There's the live-action element, which took director Michael Bay and his cast to Egypt, Jordan and New Mexico. Then there's the animated aspect, encompassing all the robots, which were built by artists at Industrial Light & Magic and Bay's visual effects company, Digital Domain.

Computers, and the artists operating them, worked countless hours to craft battle scenes between the giant 'bots, bring menacing Megatron to life and show the ancient pyramids being dismantled by the gargantuan Devastator.

It all started with a few sketches. Before any work on the film began, before the script was even written, Bay hired a team of artists to draw the robot characters he saw in his head.

"The fun thing about Transformers is it's anything your mind can imagine," he said.

Those images were given to the writers as inspiration, and later to the visual effects creators, who used them as blueprints for the film's biggest characters, said Farrar, a 28-year veteran of ILM.

"It's not unlike a building, where you've got to have a good blueprint and you spend a long time on the foundation," he said. "Then all the sudden, boop, the building goes up."

Of course, it's not quite that simple. First, artists transform each of Bay's 2-D drawings into 3-D digital images. They note the size specifics of each character (for example, Megatron's feet are 15 feet long and seven feet wide) and how they might look behind various lenses.

Before shooting begins, though, Bay and his crew choreograph where the cameras

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will be, where robots will be, where the actors will be and how they'll all interact with each other. Everything is pre-planned, Farrar said.

Because when filming starts, and star Shia LaBeouf runs through a forest to escape a robot fistfight, he's actually alone.

"There's nothing there," the actor said in an interview. "This time we didn't even have dudes reading lines back. There's literally nothing."

All that's there, Farrar said, are window-washing poles stretched up to 30 feet high. The actors talk to the poles and must react as though giant robots are responding.

"The actors do have to sell it," he said. "It would be a hoot to show what the sequence looks like with the actors talking back and forth but with nothing there other than a couple of sticks and poles."

Maybe on the DVD, he joked.

Meanwhile, artists spend about 12 weeks building each digital robot, then another 12 to 15 weeks rigging up the skeletal structures that hold all the parts together. Next comes the paint and texture. Chrome or brushed aluminum? Copper or glass?

"It's just the same as you building things in the garage by hand, only it's in the computer," Farrar said. "It's no different. All the tasks are the same, and the same disciplines apply."

Once the live-action shots are complete, robot animation begins. All those detailed transformations, which dramatize how the toy Transformers really work, are meticulously built by hand. It can take weeks to design a transformation seen for just seconds on screen.

After animation comes lighting, which lends even more realism to the robots. Then comes the compositor, "the finish carpenter of the whole process," who adds dust, debris, missiles and other details, Farrar said.

More than 350 ILM artists worked on the movie, he said, and they developed new technology to add realism to the robots' design and emotions.

The company said it would take a home computer 16,000 years to replicate their work.

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