



Episode Entry: *Vikings* Season V, Episode 519: 'What Happens In The Cave'
For Consideration in Category 114:
Outstanding Special Visual Effects In A Supporting Role
71st Primetime Emmy Awards

Vikings Episode 519: "What Happens In The Cave" offers a prime example of how Visual Effects were used to support and strengthen storytelling within the series. Visual effects were relied upon to help portray a raging sea and a vengeful Volcano. Enormous waves, torrential rain and blinding seas are a staple throughout *Vikings*'. However, in this season they played a more prominent role underlining the horrendous and treacherous conditions each character faced as they travelled toward their goals.



The shot pictured above showcases Bjorn Ironside's army sailing the Atlantic Ocean during a raging storm. This was achieved using a practical ship placed within a custom-made tank on the studio backlot. Wind and rain machines operated to provide various levels of density from large raindrops to atomized mist. Wave generators then tossed the practical boat around giving the actors and camera operators a much more realistic experience. These physical effects helped provide a much more realistic sense of peril, as the actors themselves were dealing with the conditions.

Once in Post Production, Houdini's Ocean Spectrum Algorithms were used to generate a base water surface for the animation department to work with. Custom cameras were designed to help exaggerate the movement of the boat, giving the audience a sense of sea sickness.



Original Plate



Layout



Final Comp



DI Graded

A layering approach was used by the FX Department on the water surface allowing for the creation of large customized swells, along with smaller frequency waves for the boats to traverse. Boat interaction was created using fluid simulations and custom foam layers were generated within Houdini to give them a wide variety of shapes. Spray, bubbles, rain and atmospherics were then added to help sell the intensity of the storm.



Texture Pass



FX Pass



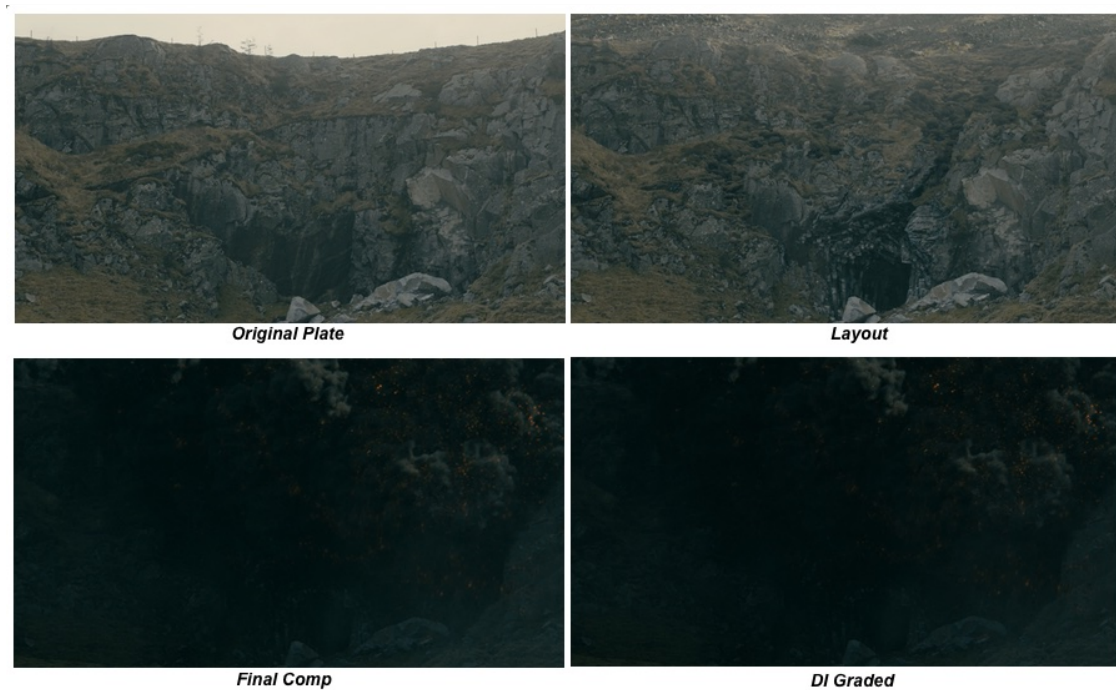
Final Comp



DI Graded

The pinnacle of episode 519 is the enormous volcanic eruption. Floki enraged with humanity and feeling abandoned by the gods, breaks down after seeing a Christian cross carved within the rocks of his holy land. In what appears to be an act of spite by the gods, the volcano violently erupts leaving Floki's survival in question.

The fine details sculpted in the model were a large part of achieving the realism of the volcano. Several camera moves were pitched during PreVis and the most effective camera followed the path of a fleeing operator watching the avalanche overtake them.



Multiple stages of concept art were generated for the volcano to ensure it appeared authentic to the Icelandic landscape. The environment team sculpted the huge landmass to the camera view, layering in small scale details, such as two-toned moss, scrubby bushes and jagged rocks, which were important to sell the alien looking landscape. Once each stage was approved, the work began to generate an airtight mesh for fracturing. The FX department fractured the relevant areas using the Voronoi toolsets within Houdini. This allowed them to swell the land and then violently collapse it downwards during the eruption. This combined with custom made lava and steam explosions helped show the buildup and release of heat and pressure. Finally, pyroclastic flows were created using Houdini's Pyro simulations, which helped sell the incredible violence of the whole event.



Original Plate



Layout



Final Comp



DI Graded

With his brothers attempting to claim back Kattegat, King Ivar the Boneless sets out to fortify the city. Massive walls were erected surrounding the perimeter and defensive towers filled with archers. Gates were constructed limiting entrance through only the back of the city or the harbor.

Like most episodes of *Vikings*, it was important for visual effects to help expand the scope of the town. With limited backlot space and only 40 feet of wall, the VFX team were tasked to help show the expansion of the city, along with the fortifications Ivar has built. Drone photography was used to show the scope of Kattegat and the surrounding defensive walls. The augmentation to the natural geography of the plates was so extreme that the plates served as a guide for the camera move and lighting. Much of the environment was digitally created leaving only small pockets of physical set and landscape in the end.