THE DRY-FOR-WET VIRTUAL PRODUCTION BEHIND THE STUNNING PLANE ESCAPE IN 'NO WAY UP'

How Dimension Studios used real-time tools and an LED wall for the sequence. ***By Ian Failes.***

At the climax of Claudio Fäh's *No Way Up* from Altitude Films, one of the survivors of a Pacific Ocean plane crash exits the now underwater aircraft and swims up to the surface, just as the fuselage begins slipping off its rock base deeper into a trench below.

This thrilling sequence was made possible partly with the aid of virtual production techniques orchestrated by Dimension Studio. The actor playing the survivor, Ava (Sophie McIntosh), was filmed on a wire rig miming the swim in front of a LED wall displaying the slipping wrecked plane and ocean environment.

"That sequence posed a real challenge," says Dimension Studio co-founder and joint managing director Steve Jelley. "We had to think, how do we get what the director Claudio wanted, which was a continuous performance all the way up to the surface? Obviously, you can't do that with a breath hold, you'd have to cut. You can't shoot that practically. We looked at visual effects, but we wanted to get the performance of the actor."

That led the filmmakers to make a choice to film the plane escape and ascent dry-for-wet in an LED wall environment. The sequence, of course, was a major collaboration amongst many people, notes *No Way Up* producer Annalise Davis, who shared duties with Andy Mayson. "I had previously worked with Dimension on Paul Franklin's *Fireworks*. Our director Claudio came to Dimension with, 'Can we do this?' And they were able to. It's always an iterative collaborative process and we were able to work together to get the best out of that, working with our DOP, Andrew Rodger, as well."

SHOOTING THE SCENE

Before the shoot, Dimension created previs of the sequence in Unreal Engine. This included builds of the trench and the plane, and then choreographing the plane slipping moment. A plane asset was then built in Maya and animated, before being transferred to an Unreal Engine asset for real-time performance on the LED wall (this asset was also sent to the film's visual effects vendors for VFX shots). The LED wall trench asset was built directly in Unreal.

McIntosh was then set up on the wire rig in front of a 31.5m wide x 6m high LED wall to enable her to swim on the spot. "This meant," explains Jelley, "that all the rest of the scene had to move. You've got the movement of the camera, the movement of the plane, the passage of the environment, all happening at the same time. That was a complicated barrage

of Scratch cues in the end in terms of queuing all of that up and trying to find the shot on the day."

The actor was fitted with tracking markers to her wetsuit costume in order to accurately motion capture her movements on the wire rig. On set, a Vicon Valkyrie v26 system enabled this tracking of McIntosh and of the camera. Details Jelley: "We wanted to track her body's movements because we wanted to ensure that we knew where she was in 3D space, so that later when we tracked in bubble and vortex simulations, we could model things like her arms going through water."

"It was a complicated shoot day," says Jelley, "but we achieved an integration between Ava's performance and the lighting and the action surrounding her that really works. I don't think you could have done it any other way, in all honesty. I think you'd just be dealing with a bluescreen and that always looks a bit bogus when it's an underwater sequence."

COMPLETING THE SHOTS

A lot has been made in the past few years about whether LED wall filmmaking is about acquiring in-camera final VFX shots, or more for interactive lighting and aiding actors and crews during filming. Jelley sees it as more of a 'continuum'.

"On this film, the majority of what we used the LED wall for was going to be in-camera and then do finishing for the things that we could never photograph afterwards. Rather than using the word 'in-camera final', we like to think about it as a composite. It's an in-camera composite here but total in-camera VFX is indeed possible utilizing the technology."

Effectively this involved taking the plate filmed with McIntosh and the LED wall and layering and effects pass over the top. VFX artists added silt and bubbles, for example. "We wanted to show this vortex around her," adds Jelley. "It's this enormous plane going down into the trench. When something that big goes down through water, it creates vortexes and it pulls you down. So we wanted to show that."

VIRTUAL PRODUCTION FOR ALL

No Way Up is an independent film, and one that both Dimension's Jelley and producer Davis thinks shows that virtual production has a place not just among the making of the biggest blockbusters.

"One of the concerns with virtual production is that it's for studios and it's for big films because it's expensive," comments Davis. But both Steve and I feel really strongly that we want it to be accessible to independent films. I think it's really important to find ways that it can be used on independent films, so it doesn't become a two-tier system. There are ways for independent films to access virtual production and engage with it in a way that won't be crippling to the budget, that can be cost neutral. We showed that here." **b&a**

Page 70: Sophie McIntosh on a wire rig in front of an LED volume for the climactic sequence.

Page 73: Dimension Studio had planned out the scene by previs' the action, then prepared real-time assets for the LED wall, before the shoot.

All images courtesy Dimension Studio.