



Timeline for a series of adventures

with CBeebies' Andy

GTC member DoP **Stephen J Brand** has just started work on the second series of *Andy's Safari Adventures*, having shot the first series last summer. This latest in the line of the successful CBeebies 'Andy's Adventures' series, produced by the BBC Natural History Unit, takes presenter Andy Day on a series of CGI safari trips to meet an array of creatures in their natural habitats, all controlled from a new sci-fi inspired 'control tower', which Stephen was brought in to light and shoot.

The 'Andy's Adventures' format is a fun way of introducing young children to different creatures by superimposing Andy via green screen onto already existing footage from the Natural History Unit. This latest version of the brand would see the popular presenter taking off for various 'safaris' in a magic flying Jeep (supported by scientist Jen from a new control room set) and transport him to different environments to 'meet' and introduce all sorts of

creatures. The 20 x 14-minute series was shot at The Bottle Yard Studios, Bristol, last June. Stephen's task was to shoot the new control room 'drama' sequences, as well as some green-screen setups with one of the other characters, Mr Hammond. Other scenes, such as Andy's green-screen flying sequences and encounters with the animals, would be shot by another crew, some of this at the Eden Project in Cornwall.

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Figure 1: The first set design model



Planning: January 2017

Early in 2017, Stephen met with director Adam Oldroyd, series producer Mark Jones and VFX supervisor Fred Tay to talk through the logistics of shooting this new take on the already successful CBeebies series, which had previously seen Andy engaged in 'Wild', 'Prehistoric' and 'Dinosaur' adventures.

Set designer Sarah Hauldron had already produced a design and model for the control room set (Figure 1) and now it was time to decide on the 'look'. Different influences were mentioned, including *Doctor Who*, *Alien* and other sci-fi productions. In the story, scientist Jen (Puja Panchkoty) helps Andy as he plans and sets off on his various adventures.

The idea of using practical lights and lighting built into the set was discussed as was smoke, although the smoke was dropped early on because it would cause too many problems with the CGI work later in the process. Stephen also considered glass diffusion filtration but later ruled this out too. As much as it would have been nice to soften the image, he had to allow for easier matching with other elements in the green-screen post-production.

Luckily, it was not too late to arrange for the built-in lights and a phone call to Sarah straight after the planning meeting meant slots for the lights and removable panels could be factored into the set build, which had already started, without incurring too much extra cost (which would have been the case if this conversation had been any later) (Figure 2). The look for the set was to be high contrast, dark but with point sources coming from the 'futuristic' technology the actors were operating, with as many lights built in as possible (Figure 3). To complicate matters, the action would also be filmed from a top-shot, meaning that, for instance, the front desk into which lights would be set also needed a replacement blue-screen cover that could be shot from on high.

The set comprised several different areas (Figure 4): a lift, through which Andy would arrive, a front control desk where Jen would operate tech to help Andy, a central 'hologram' podium where objects would appear, two work benches towards the rear of the set supporting a laptop with three large monitors, and a big screen at the front on which Andy's boss, Mr Hammond, would appear (via green screen).

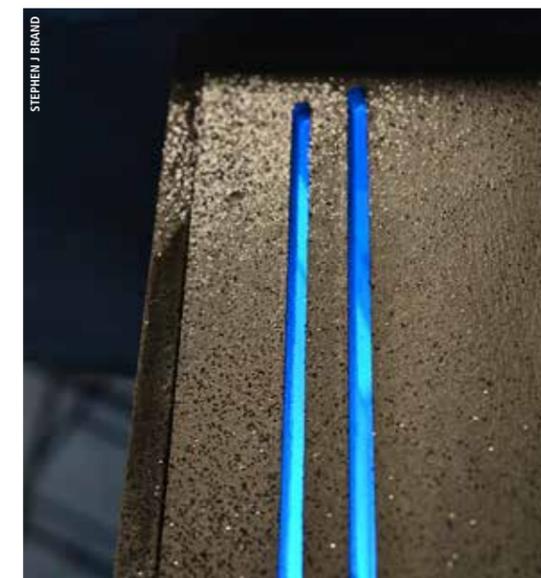


Figure 2: Kino Flo tubes with 'bright blue' gel built into the set

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The Sony PMW-F55, with its global shutter, increased dynamic range and colour space compared to the Sony PMW-500, as well as recording files as XAVC Cine-EI S-Log2 (LC709A), provided much more latitude for the post-production.



Figure 3 (top): The lighting would be high contrast with the futuristic technology (such as this central podium lit with a LitePanels Bicolour 1x1 panel and 'bright blue' gel) providing sources of light; Figure 4 (bottom): The set from the top shot showing the different areas

For the general ambience, there would be three Filmgear 4.8kW space-lights overhead (skirted to control the spill), (Figure 5), while complementary colour tones would be used in the main set, with warm oranges around the rear desk areas and the rest of the set bathed in 'bright blue'. The lift area was to be backlit with an ARRI 5K tungsten Fresnel lamp



STEPHEN J BRAND

Figure 6: 'Printed' control panels reflected in Jen's glasses

on a wind-up stand with double 'bright blue' gel and small ARRI tungsten fixtures hidden inside the lift.

The front control desk, topped with a curved blue Perspex cover, would be lit with a Cineo TruColor HS and LEDs from inside, giving a blue glow and allowing printed buttons on the huge touch-screen that Jen operates to reflect in her glasses (Figure 6). The printing on the bench cover used in shots of Jen was good enough for reflections but not to be featured in close-ups of her hands, so when filming the top-shots and close-ups, an 'unprinted' blue-screen Perspex cover would replace the printed one and the dials and switches were painted on later in post-production.

For the rear double workbench area, two Rosco (Gaffer Kit) LitePad 12x12 5600K panels were rigged into the main 'laptop desk' and two smaller 6x12s into the other one. In the centre of the set the 'hologram' podium (Figure 4) was lit internally using a Li-Ion battery-powered Litepanels Bicolour (5600K) 1x1 panel with 'bright blue' gel (the battery chosen to avoid cables getting in shot or providing a trip hazard).



STEPHEN J BRAND

Figure 5: Filmgear 4.8kW space-lights overhead (skirted to control the spill)

The large front screen area would be green screen and replaced in post. This area was lit with five 4.8kW Chroma Q Space Force LED lights rigged above the green screen and a number of floor-mounted Kino flo tungsten 44s on C-stands.

There would be no lighting on the floor of the set that wasn't built in, to minimise lighting hotspots in the three rear monitors, two of which were angled, and also to avoid unwanted reflections in Jen's glasses, especially when tracking across the front of the set. With such a small crew and only two weeks to shoot, Stephen didn't have time to move and flag lights on the floor. The only concession to this was a Kino Flo LED Celeb 201 light on a C-stand, plus white and silver reflectors, which were brought in for close-up shots.

Pre-production: Early February 2017

In early February the whole set, and also another set 'The Jungle Hut', were built in the studio in order to make sure they would work, then dismantled and stored until time for the shoot. This meant Stephen was able to go through the design in detail with Sarah to check that the Kino Flo tubes could be incorporated in the right places. Chris Thompson (from 180 Lighting who would supply all the lights) and gaffer Grant Armstrong were also brought in at this stage.

The other 'Andy's' series had been shot on Sony PMW-500 HD 2/3-inch CCD cameras but Stephen pushed for using the Super 35mm 4K sensor Sony PMW-F55 to give a more cinematic feel. He planned to use the F55 with an Atomos Shogun on top and a Grade 1 studio monitor for lighting. The Shogun meant they would be able to play back any particularly tricky shots if there were any focus or other concerns (there wasn't time to play back everything so these moments had to be chosen carefully!).

This choice of camera gave increased dynamic range and colour space, providing much more latitude for Fred to work with in post-production. The lenses selected were Nikons (17–55mm DX and 70–200mm FX), this choice again influenced by the need for speed, the size of the crew and the quality of the image (relatively sharp so it would be good for the large amount of post-production work required).

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Rigging and lighting: 1–2 June 2017

Before going into the studio, Stephen calibrated the Grade 1 studio lighting monitor, Sony F55 and onboard Atomos Shogun with Fred at Doghouse Post.

In the days immediately prior to the shoot, Chris and Grant worked with their assistants to rig the overhead space-lights and LED panels, to fix the Kino Flos tubes into the set, and to set the tungsten 2kW and 1kW Fresnel lights for the three rear monitor screens and tungsten 5kW Fresnel and smaller tungsten fixtures in the lift.



ADAM OLDROYD

A focus-puller was essential because of the low light levels and F55's large sensor

Camera kit

Main camera

Sony PMW-F55 4K S35MM

Sony F55 lenses

Nikon 17–55mm DX VR lens F2.8
– with cine gears
Nikon 70–200mm FX VR lens F2.8
– with cine gears

Sony F55 onboard monitor and playback

1st AC – 'Focus-puller' monitor – SmallHD DP4 monitor and cables
DoP – Atomos Shogun

Sony A7s camera (top-shot rig)

Sony A7s camera
DSLR camera rig with 15mm bars lens support
Lanparte V-mount power supply

Sony A7s lenses

Canon 24mm F2.8

Grips

(Sony F55) – Ronford F15 head with tall and short legs and ground spreader
(Sony A7s) – Sachtler 18P head and carbon-fibre 3-stage legs



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Figure 8: Mr Hammond would appear on a huge screen, apparently in a variety of environments, meaning all the green-screen lighting setups were different; all the various sequences for the whole series had to be shot in one afternoon

Also pre-rigged were tungsten fixtures built into the rear workbench area, which would give an orange glow to the rear of the set. Metal trunking had to be cut, laid and painted behind this area to house the power supply cables to feed these lights.

For backlight Stephen used 2kW ARRI tungsten Fresnel lights positioned on top of the set for each of the main areas in which the actors would be working.

Once they began to see everything in place, it became evident that the corners of the set were a bit of a 'black hole', so set builder Dave Chappell helped out by improvising some extra tubing and cases, which could be lit to give more interest in the back of cross-shots.

Filming: 5–16 June 2017

The Sony F55 recorded XAVC Cine-EI S-Log2 (LC709A) to Sony SXS cards, which were downloaded and backed up daily on site by 1st AC Steve Brooke-Smith and transferred to the BBC edit, for confirmation before reuse of the media.

For tracking, the crew had a suitcase dolly at the front of the set within the green-screen area. As the budget didn't allow for a grip, various members of BBC production were trained in the use of the dolly. For the tracking shots Stephen used the Nikon 17–55mm, set at 20mm, 40mm and 55mm, stop T2.8/4. Steve pulled focus while Stephen operated the camera. For tripod shots the longer 70–200mm Nikon would also come into play.

The overhead shot looking down into the set was from a Sony A7s, recording to an Atomos Samurai with 24mm prime lens, rigged on a scaffold tower.

With all the drama sections of 20 episodes to shoot in a couple of weeks, the script planning was pretty complicated, in order to make sure that everything would hang together with the green-screen sections featuring Andy, which would be shot at a completely different time by another crew. The director Adam Oldroyd had worked closely with series producer Mark Jones and the script supervisor, Dean Dodds, to work out the continuity so that the entire run could be shot as logically as possible, meaning that similar setups from all 20 episodes could be shot at the same time to minimise time in the tight schedule. Although he works mainly in wildlife now, Adam's background is in drama and short films, so he knows exactly how to maximise the time with a small crew.

Green-screen work

In the series, Mr Hammond (Adam Astill) appears on a screen at the front of the set (Figure 8). As well as all the sequences involving Andy and Jen in the control tower, Stephen was also to film Mr Hammond against the green screen to match with various different scenarios that would be put together in post. These short scenes all had to be shot in one afternoon and would be inserted into everything from a disco party background to the African savanna for a meerkat sequence in the setting sun. The green-screen work was all done in the excellent custom-built facility at Bottle Yard, whose site director, Fiona Francombe says: "We were thrilled to have the team back at the Studios for *Andy's Safari Adventures*. This is outstanding kids' TV, expertly made by the world-leading Natural History Unit. We developed our green-screen studio to suit the team's needs for the last series, so it's great to have them back on site picking up where they left off!"

Post

The complicated post-production work involved weeks of work for Fred Tay at Doghouse. It included painting in Mr Hammond with his various backdrops to the big front screen, adding in the operating controls to the front desk, flying in objects to the central 'hologram' podium, painting in the tablet and touch-screen controls, and adding in detail to the rear laptop desks, plus many more items throughout the series. However, involving Fred right from the start of the planning meant that equipment and shooting decisions that would make his work easier rather than cause problems for him could be taken at the right stage of the process.

The series has already been recommissioned even before the first series transmits. A huge amount was achieved on a tight schedule and budget – and the key to this was all in the planning! Along the way the team also had a lot of fun. Presenter Andy says of working with Stephen: "Stephen is a great camera operator who is dynamic, energetic and fun to be around, which is what you want as a performer. He clearly knows what he is doing and you feel you can trust him; he's a great guy."

Fact File

Stephen J Brand, GBCT, GTC is a Director of Photography, camera operator and documentary lighting cameraman with over 20 years' professional experience. His

extensive credits include work for many major UK and international broadcasters, and he has worked in many countries around the world. Stephen and director Adam Oldroyd are currently planning a feature film project with Michael Riley (Sterling Pictures) looking to shoot in Wales later in the year.

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