2020 AACTA AWARDS

VISUAL EFFECTS OR ANIMATION HANDBOOK

Birds of Prey

Vendor: Luma Pictures

To Be Supplied

Candidate Summary

Reel Summary

Synopsis:

Birds Of Prey And the Fantabulous Emancipation of One Harley Quinn is a twisted tale told by Harley herself, as only Harley can tell it. When one of Gotham's most sinister villains, Roman Sionis, and his sadistic right-hand, Zsasz, put a target on a young girl named Cass, the city's wicked underbelly is turned upside down looking for her. Harley, Huntress, Canary and Renee Montoya's paths collide and the unlikely foursome have no choice but to team up to take Roman down.

Written Support Material:

Notes:

Birds of Prey

Bonnie the Elephant

Vendor: Swim Like a Boss Productions

Candidate Summary

Holly Hargreaves - *Animator / Writer/ Director/ Producer*

Reel Summary

Synopsis:
Bonnie the Elephant is a cheeky adult animation set inside a children's storybook.

Written Support Material:
n/a

Notes:

The Commons

Vendor: Blackbird

Candidate Summary

Nick Ponzoni - *VFX Supervisor*
Wayne Osborne - *CG Artist*
Joshua Tilbrook - *CG Artist*
MJ Kim - *CG Artist*

Reel Summary

Synopsis:
Set in a gripping vision of the near future, THE COMMONS is an absorbing character-driven relationship drama and a story about motherhood as the ultimate act of faith in humanity.

Written Support Material:
Stan series The Commons is a drama set in a not so distant dystopian future where global warming has progressed to an inevitable point leading to frequent extreme weather events, food shortages, mass population displacement and disease, but at its heart, The Commons explores the concept of motherhood and the importance of hope in the face of adversity.

These concepts are captured in the opening sequence of Episode 1, a fully CG sequence where ambiguous moving shapes are revealed to be a baby in a womb. Being the opening sequence of not just the episode but the series as a whole, it was incredibly important for Blackbird to be working closely with key creatives including director Jeffrey Walker and writer/creator Shelley Birse to set the tone of the series through our visuals.

A key challenge for VFX was achieving this impossible shot inside the womb and trying get the right balance between reality and what looked beautiful, dramatic and cinematic. A full CG build was required to create the baby and the womb, and attention to detail in these asset builds was crucial to ensure a sense of heightened reality that lent itself to the world in which the series itself would exist - it's the world we know but not quite as we know it.

Originally envisioned as one shot, director Jeffery Walker and Blackbird Creative Director Nick Ponzoni developed the sequence through pre-visualisation to block the composition and order of shots, beginning with abstract close ups of different forms and shapes that slowly cut wider to reveal the figure of a baby in a womb. This ambiguity in composition was also heightened by delicately balancing the use of light and darkness within the confined space. The overall look was then finessed in animation, lighting, FX and compositing, with particular attention paid to the surfacing of the CG baby with details such as fingernails and wrinkles, as well as to the way amniotic fluid in the womb diffused the light. Additional details included interaction and stretching of the wall of the womb as the baby moves and kicks, and the hair simulation was also finessed to get the fine and beautiful details of the eyelashes catching the light and the baby's hair moving realistically in the amniotic fluid.

Visual effects were crucial throughout the series to transform Sydney as we know it, where the series was filmed, into a dystopian landscape 5-10 years in the future where the environment has been irrevocably damaged and hazardous weather events are an everyday feature of life.

To create this world, Blackbird augmented live action aerial plates turning lush forests and green fields into dry, desolate vistas riddled with spot fires. Each plate was carefully selected with a terrain that would lend itself to the most impactful transformation. River systems gave a clear indication of

how dry things could become, and from there we worked outwards drying up the trees via procedural CG tree systems and utilising projected matte painting techniques to alter the surrounding areas of either grass or suburban structures. We also eroded coastal neighbourhoods, created massive sinkholes in Sydney streets, built an army of CG police drones and constructed a CG 'tent city' where families from the scorched and dusty wastelands of the surrounding countryside have come to take refuge in a converted stadium.

By the time we were in the latter part of the schedule in late 2019, the Australian bushfires had taken their grip on the country and we only had to look at the news or literally out the window to compare our visual effects against real world examples.
A major visual effects build was the fictional gated community of Stonehewen, where the rich and the privileged have protected themselves from the adverse effects of the current climate. For Stonehewen, the Blackbird team worked quickly on designing and building a satellite city which was modern and green but not leading towards science fiction. The balance had to be struck in order to make sense amongst all the other coverage and the period it was set in. Working closely with the director we created a CG city that fit precisely into the location where the Stonehewen exteriors were to be shot. This meant that all angles shot worked, whether they were aerial, from the ground or even taken from the surrounding waterway, as it was just a matter of tracking plates and adjusting the orientation to match. Having most of the plate augmented in CG allowed us to also shift the weather to make the shots feel like they we captured at vastly different points within the narrative.

Notes:

The Eight Hundred

Vendor: Rising Sun Pictures

Candidate Summary

Tim Crosbie - *OVerall VFX Supervisor*
Joy Wu - *Overall VFX Producer*
Jason Troughton - *Special Effects Supervisor*
Tom Wood - *VFX Supervisor*
Julian Hutchens - *CG Supervisor*

Reel Summary

Synopsis:
The film is based on true stories taking place during Sino-Japanese war in Shanghai, China, in 1937, the battle and protection of the Si Hang Warehouse. There are around 400 soldiers (so called Eight Hundred Heroes in history), holding out against numerous waves of Japanese forces for 4 days and 4 nights.

Written Support Material:
n/a

Notes:

The Eight Hundred

Vendor: Fin Design + Effects

Candidate Summary

Chris Spry - *VFX Executive Producer*

Reel Summary

Synopsis:
In 1937 a group of Chinese soldiers and draft dodgers puts up a four-day defense of a Shanghai warehouse complex just as Japanese forces are overwhelming China.

Written Support Material:
n/a

Notes:

Ford v Ferrari

Vendor: Rising Sun Pictures

Candidate Summary

Olivier Dumont - *Overall VFX Supervisor*
Kathy Siegel - *Overall VFX Producer / Additional Supervisor*
Malte Sarnes - *VFX Supervisor*
Mark Byers - *Overall Special Effects Supervisor*
Matt Greig - *Compositing Supervisor*

Reel Summary

Synopsis:
American car designer Carroll Shelby and driver Ken Miles battle corporate interference and the laws of physics to build a revolutionary race car for Ford in order to defeat Ferrari at the 24 Hours of Le Mans in 1966.

Written Support Material:
n/a

Notes:

I Am Woman

Vendor: Cutting Edge

Candidate Summary

Simon Maddison - *VFX Supervisor*
Marcus Bolton - *VFX Executive Producer*
Matt Ebb - *CG Supervisor*
Aevar Bjarnason - *SenCG Lead*

Reel Summary

Synopsis:

1966. Helen Reddy arrives in New York with her three-year-old daughter, a suitcase and $230 in her pocket. Helen had been told she had won a recording contract, but the record company promptly dashes her hopes by telling her it has enough female stars and suggests she has fun in New York before returning home to Australia.

Helen, without a visa, decides to stay in New York anyway and pursue a singing career, struggling to make ends meet and provide for her daughter. There she befriends legendary rock journalist Lillian Roxon, who becomes her closest confident, and inspires her to write and sing the iconic song "I Am Woman" which becomes the anthem for the second wave feminist movement and galvanises a generation of women to fight for change.

She also meets Jeff Wald, a young aspiring talent manager who becomes her agent and husband. Jeff helps her get to the top, but he also suffers from a drug addiction, which gradually turns their relationship toxic. Caught in the treadmill of fame and dependent on Jeff to manage her professional life, Helen finds the strength to take control of her own career and keep pursuing her dreams.

Written Support Material:

I Am Woman is a period film produced by Goalpost Pictures, with Cutting Edge being the sole post vendor. Directed by Unjoo Moon and shot by Cinematographer Dion Beebe, It tells the story of Helen Reddy's decades-spanning career, culminating in her iconic song 'I Am Woman' becoming the anthem for the women's movement in the 1980s.

While shooting took place in Sydney, NSW, the film is set entirely in the US and centres around some very iconic and recognisable parts of the country. The role of VFX was to re-create these moments, crowds included, in perfect historical and location-specific accuracy.
While there was a lot of period cleanup throughout the film, the majority of the VFX work Cutting Edge contributed were in two key locations.

During her rise to the top, Reddy performed at Carnegie Hall in NYC in 1973. It was an essential part of her story, playing to a packed house at that particular venue marked a real milestone in terms of her success. It was important for the director that the audience felt the magnitude of the moment on screen. Shot at Enmore Studio in Sydney, our job was to replace everything outside of the immediate stage area to perfectly match the real venue. When looking out into the crowd, this included extending the floor space and creating the three iconic rounded mezzanine levels in 3D. Carnegie Hall has been through some significant changes in the decades since Helen performed there and we were careful to make sure our Hall was 100% accurate to what existed in the '70s.
In terms of the broad audience, we decided to populate the front eight rows with real people, tiling the 80 extras on the day into what totalled around 400. Due to the backlit lighting design by Beebe, we decided on rotoscoping these plates rather than a green screen to maintain the rim light. The rest of the audience on both the ground and mezzanine level are entirely CG.

Looking back at the stage, we replaced everything outside of the performer's central area. The pillars, walls and curtain are all historically precise digital matte paintings added to replace the Sydney location.

The second significant VFX contribution was for the final scene of the film. At the 1989 Abortion Rights Rally held at Washington Monument, America paid tribute to Reddy's song which she sang in front of an audience of more than 300,000 people. Filmed on location in Sydney's Centennial Park, there was a lot of work to do in VFX to sell that moment in history. Production provided the stage and 100 extras for cutaways, but the rest of the environment and all of the more massive crowd shots were entirely CG.

Using video footage from the actual event in the '80s, we were able to gather enough information to accurately replicate what happened, from the weather, the location, the number of people in attendance, even down to the signage that was there.

When looking into the crowd and over Helen's shoulder, the performers on stage were shot against a green screen. The fully CG environment was tracked in 3D, lit and composited into the plate. The 3D crowds were animated to match the performance of the extras in the cutaways and lit to replicate the foreground plate. CG Tools were built to allow wardrobe, skin colour and signage choices to be easily art directed during the edit so that the entire scene was a seamless sequence. When looking back at Helen on the stage, VFX was required to place a 3D Lincoln Memorial in the background. Originally intended to be mostly in-camera from this angle, a storm on the day resulted in a lot more unwanted location being visible through the lens. As it became logistically impossible to construct a green screen of appropriate height within the time and weather conditions, what was shot required extensive roto-scoping of flags and actors to fill the gaps. Once again, a 3D model was built, tracked and lit to match what the actual event would have looked.

One of the biggest challenges on this film from a VFX point of view was the budget. Telling this story and creating the scale required to do it justice required a lot of planning in pre-production so that we used every cent efficiently. Shooting in Sydney for the US is becoming more and more critical to productions of all sizes and coming up with affordable ways of achieving it is crucial to the entire film industry here in Australia.

In this instance we achieved it by working closely with the director, producers, cinematographer and heads of departments in pre-production, and the editors in post-production, allowing us to come up with the ideal approach for each scene in a cost-effective way. For example, the decision on when to move the camera and when to leave it locked off can have a massive impact on the VFX budget. That said, done improperly with too many completely static cameras can have a very negative effect on the flow of the scene. It took long conversations and much testing to come up with the right mix of both approaches to hit the budget and add what was needed for the story.

The digital audience is another example of the challenges VFX faced. Creating a 3D crowd system is usually quite a massive undertaking, and not something every budget can accommodate. In this instance, though, we re-purposed several existing 3D library assets and tailored them to the requirements of the show. The entire 3D team for the film consisted of just two artists.

While this is not the first production to make use of digital crowds and 3D set extensions, we feel that making it work for this scale of the show was our most significant accomplishment.

Notes:

The Invisible Man

Vendor: Cutting Edge

Candidate Summary

Jonathan Dearing - *VFX Supervisor*
Marcus Bolton - *VFX Executive Producer*
Matt Ebb - *CG Supervisor*
Aevar Bjarnason - *Senior CG Lead*

Reel Summary

Synopsis:

Trapped in a violent, controlling relationship with a wealthy and brilliant scientist, Cecilia Kass (Elizabeth Moss) escapes in the dead of night and disappears into hiding, aided by her sister (Harriet Dyer) and their childhood friend (Aldis Hodge).

But when Cecilia's abusive ex (Oliver Jackson-Cohen) commits suicide and leaves her a generous portion of his vast fortune, Cecilia suspects his death was a hoax. As a series of eerie coincidences turns lethal, threatening the lives of those she loves, Cecilia's sanity begins to unravel as she desperately tries to prove that she is being hunted by someone nobody can see.

The Invisible Man is written and directed by Australian Leigh Whannell, one of the original conceivers of the SAW franchise who most recently directed UPGRADE. Produced by Kylie du Fresne for Goalpost Pictures, Jason Blum for Blumhouse Productions, the film had its worldwide release through Universal Pictures.

Written Support Material:

Universal Pictures rebooted one of their monster characters The Invisible Man in this horror thriller by filmmaker Leigh Whannell. Elizabeth Moss stars as Cecelia whose character is tormented by Oliver Jackson-Cohen playing Adrian. The Invisible Man was shot in and around Sydney over August and September 2019, post was scheduled to finish mid-January 2020. The film is set in San Francisco in the present day or very near future as the technology featured is still a little way off. From amazing coastal cliff top homes south of Sydney's to high rise city buildings and northern beaches suburbs the film was treated to look and feel like California.

Adrian, a high-tech genius fakes his death and wears a suit that makes him appear to be invisible as he terrorizes his former lover. Transforming the literary classic The Invisible Man by H.G. Wells into a modern day-parable about domestic violence. This version of the story explores the idea of super advanced technology being used for personal vengeance.

Around 350 visual effects were created in a nerve-rakingly short three-and-half months. A small hand-picked team at Cutting Edge were tasked with creating a wide variety of visual effects that spanned everything from basic clean up to full CG character animation sometimes including water and cloth simulations. Around 120 visual effects shots were storyboarded and 230 additional shots needed to be accommodated during post-production.

Originally the film's effects were mostly weighted towards a high speed car chase and crash sequence near the end of the film. This car chase scene was greatly reduced during editorial and the bulk of the post work was shifted to feature the Invisible Man's high tech suit. The suit was not always invisible and had to not only show the way it turned on and off but how it reacted to taking

damage. At times it was also partially revealed by rain water and showed the effects of being sprayed by a fire extinguisher and gunshot damage.

One scene that saw Elizabeth Moss being lifted off the ground and thrown against a wall had some very difficult clean up as not only was she partially covered for most of the scene but a lot of the set was affected by the fight. We needed to create a digital double and cloth simulation to replace her performance and wardrobe. This and other scenes were shot with the use of motion control to enable multiple matching passes.

The tight budget and deadline were cause for concern from the start but with the majority of the effects being earmarked for just augmentation of existing props and sets and the main character being mostly invisible the task seemed somewhat achievable. As so often happens though the best laid plans go out the window during and after the shoot and the quantity and type of effects changed and increased rapidly but still had to be completed by the original deadline.

Notes:

IT Chapter 2

Vendor: Method Studios

Candidate Summary
Randy Starr - *VFX Producer*
Jimmy Uddo - *VFX Producer*
Nicholas Brooks - *VFX Supervisor*
Josh Simmonds - *VFX Supervisor*
Ineke Majoor - *Executive Producer VFX*

Reel Summary

Synopsis:
Defeated by members of the Losers' Club, the evil clown Pennywise returns 27 years later to terrorize the town of Derry, Maine, once again. Now adults, the childhood friends have long since gone their separate ways. But when people start disappearing, Mike Hanlon calls the others home for one final stand. Damaged by scars from the past, the united Losers must conquer their deepest fears to destroy the shape-shifting Pennywise -- now more powerful than ever.

Written Support Material:
Murderous shapeshifter IT resurfaces to terrorise the residents of Derry, Maine in Warner Bros.' IT Chapter Two. Set 27 years after the Losers Club first encountered the ancient cosmic evil, the film reunites the now grown-up group of childhood friends who are set on stopping him once and for all. While IT often assumes the form of deranged clown Pennywise, he also manifests in ways that exploit a victim's greatest fears. Director Andy Muschietti and Production VFX Supervisor Nicholas Brooks, who held the same roles on the preceding IT, enlisted Method Studios Melbourne to help realise some of the film's most twisted moments with frightening phobia-driven visuals.

It Chapter 2 brings Stanley Uris back to the Neibolt house. Actor Wyatt Olaf had changed enough that de-ageing FX were required to return him to the look of the first film. He also needed to look like he'd spent 27 years in a fridge.

With substantial augmentation required for the live action shots (which also needed to cut seamlessly with CGI animation) we started with a solid 3d asset of Stanley. His soft tissue deformation was driven by a hybrid of Nuke-based facial tracking combined with traditional rotomation. Control could switch to hand-key framed motion for the many full CG Stanley shots.

An extensive R&D process ensued, working out how a 5kg head can sprout spider legs and then move in a convincing and physical manner, while maintaining the "funny scary" aesthetic of the film.

During the hatching of the legs, Houdini's Vellum was used to simulate flesh, skin and fascia. The same techniques were used to add secondary motion to Stanley's neck stump and giblets. Sticky fluids with suspended particulate were also employed to create what was affectionately known as "poutine" when the legs burst through the skin.

We built a robust system to simulate hair and ground interaction. Detritus would stick to Stanley as he moved, falling away again when his action warranted it.

Stanley was initially meant to be viewed in motion in mid to wide shots, but we ended up using him as full CG in extreme close ups, often with Richie's CG hands interacting and bunching the skin tissue on Stanley's face.

When Richie enters his childhood flashback, he's tormented by a giant statue of Paul Bunyan. We built Bunyan from the ground up simulating real world construction methods; a steel armature with multiple layers of fibreglass, paint and then a coating of resin on top. When Paul Bunyan came to life, maintaining that sense of materiality was paramount. A collaborative approach between animation and FX allowed us to have his movements initially stiff and poppy, which in turn drove both Rigid Body and Vellum surface simulations. Bunyan's movements became increasingly fluid as his joints loosened, wreaking havoc on his surrounds. This of course required multiple layers of soil, grass and tree simulation as well as a gazebo destruction.

Notes:
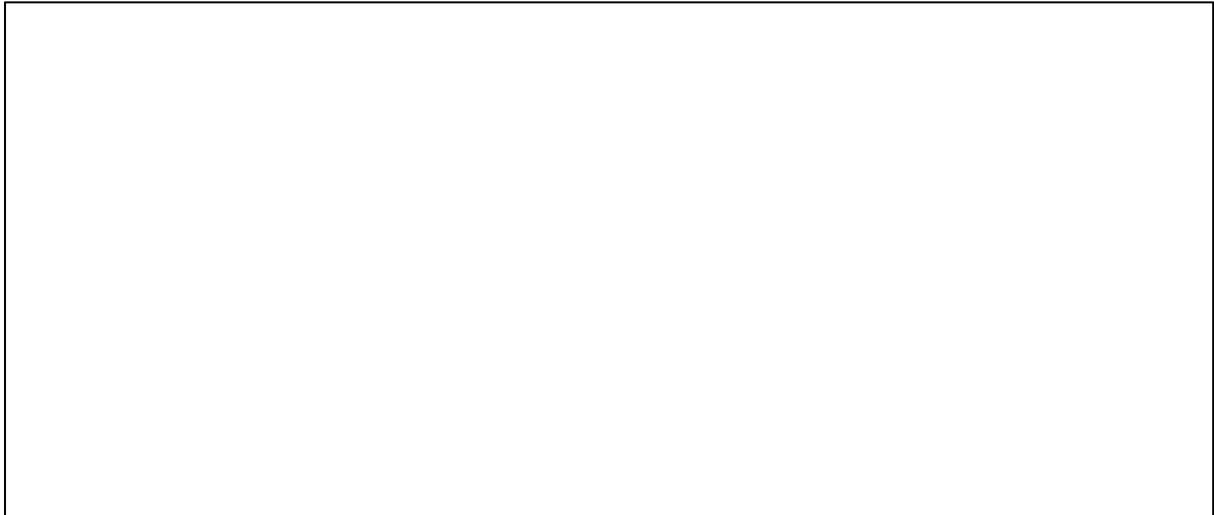
Jumanji The Next Level

Vendor: Method Studios

Candidate Summary

Thomas Elder-Groebe - *VFX Producer*
Mark Breakspear - *VFX Supervisor*
Glenn Melenhorst - *VFX Supervisor*
Ineke Majoor - *Executive Producer VFX*

Reel Summary

Synopsis:

When Spencer goes back into the fantastical world of Jumanji, pals Martha, Fridge and Bethany re-enter the game to bring him home. But the game is now broken -- and fighting back. Everything the friends know about Jumanji is about to change, as they soon discover there's more obstacles and more danger to overcome.

Written Support Material:

For the film's final showdown, Director Jake Kasdan and Production VFX Supervisor Mark Breakspear enlisted Method Studios to transform basic bluescreen sets into complex environments.

Method Studios faced many effects challenges in Jumanji: The Next Level – including a fortress, an airship and some major action – one of the principal ones was the winged horse Cyclone.

Method Studios VFX Supervisor Glenn Melenhorst was on-set during the filming of the sequence in Atlanta.

Minimal set pieces were used during the shoot, we went to build out the fortress and blimp through digital artistry. Using provided concept art as a starting point, Method artists elaborated on initial designs in collaboration with production. The fortress and snowy environment photogrammetry was provided from the initial data however for the landscapes it was heavily modified and modelled in Zbrush. It was important that the artists kept the fortress and blimp assets grounded in reality to help immerse the audience in the story. In addition to crafting the detailed environments we also added significant dynamic FX to the sequence, which largely takes place in the midst of a snowstorm.

Each of the principle characters were also scanned and modelled and their performance was motion captured by our animators and inserted into shots.

One of the more complex assets we had to build was Jurgen's blimp. It had to sustain damage at various levels throughout the sequence most of the sequence was covered with actors on a partial set or green screen however many shots ended up being full CG.

The fight inside the blimp contains a lot of action; the blimp is out of control and ripping apart, with sides flapping, as the characters grapple with each other. We ended up creating everything except the actors in CG and all the pieces came together and having everything look as if it belongs in the scene.

We built and simulated the interior of the blimp often removing what little was left of the practical set and replacing it with CG. We also handled all the internal and external destruction of the blimp in Houdini this extended to the destruction of the fortress. None of the Pyro in the sequence was

practical it was all simulated in Houdini. The interior destruction shots of the blimp required us to simulate cloth, fur, snow, ropes, chains, falling debris and dynamic breakable assets.

During the battle, the Ming character takes to the sky on a horse that sprouts bat-like wings. Method artists explored different ways to believably depict the motion of the horse's legs while in-flight. Artists also crafted the picturesque clouds and light rays surrounding her using extensive FX.

Method received a horse asset from production that was based on a generic black horse that wasn't exactly matched to the live action one. We used the supplied basic mesh and then began to match it into turntables of the real horse. It was a lot stockier than a lot of the horses that we had worked on previously and we also had to work out the wings and flying.

We knew early on that the Director Jake Kasdan wanted to do bat wings rather than feathered bird wings for the horse. Jake didn't want sharp edges; he wanted a gracefulness to it, but not too bat-like and angular. So it was one of those 'make bat wings but don't make it look like bat wings' kind of briefs.

One of the things we had to try and do was work out what the rest of the horse was doing when it flew. At the start, there was a desire not to have it look like it was galloping as it flew. We did a bunch of tests where the horse was just dangling and that obviously didn't look good. It looked like the wings were carrying away a dead animal!

We started to bring back that 'searching' look with the feet and then when it was gliding it would hold its legs out in a hero pose. When it got back into galloping, it's flying. Then there were times when the horse is really working to gain altitude so we did more digging with the feet to create that sense of energy.

Awkwafina, who played Ming, was filmed riding on a buck, like a bucking bronco setup. It was basically a rig that see-sawed forward and back. Her movement on the buck was okay, but it didn't have anywhere near the energy that our horse needed. So we would matchmove her on the buck, and then we built our CG horse underneath her to achieve the result which was to charge a lot faster and more energetically than this mechanical buck could do. We then re-projected Awkwafina onto a 3D mannequin and then restored and corrected where it broke.

So she was initially see-sawing back and forth, but then a lot of her moving up and down and swaying was put in afterwards by our artists. For wider shots where the horse is doing even more aggressive movements, we then went with a fully digi-double.

Notes:

Little Monsters

Vendor: Alt VXF

Candidate Summary
Jason Hawkins - *VFX Supervisor*
Chris Gardner - *VFX Technical Director*

Reel Summary
Synopsis:
A washed-up musician teams up with a teacher and a kids show personality to protect young children from a sudden outbreak of zombies.

Written Support Material:
Project
Little Monsters was a project we got into via our relationship with director Abe Forsythe, and his producing team at Made Up Stories. We knew from the outset that this was a challenging but rewarding project, one that had the very real budgetary constraints that come with making a fairly low budget Australian horror comedy.

Our approach therefore was about using visual effects to add depth and scale to the production, wherever possible, within a tight budget.

Abe had chosen a few key shots where we could show off scale, and opted for more economical coverage once we had established that letting everything sit back and be more intimate. When we got into post we worked closely with editorial and quickly identified more shots where our approach would and could help elevate the film.

Process
For the Zombies, we need to beef up our in-camera extras (100 on a good) day to up to 2000 zombies in a shot. We achieved this in a number of ways, using 2D greenscreen elements, tiling, and 3D crowd extension –sometimes all 3 in one shot.

Using in our in-house crowd system inside Houdini, our animation team did several motion capture sessions to recreate the movement of our featured in- camera zombies.

Our digi-doubles were modelled in Maya with a few varied body types and shapes. Faces were randomized from our library of 3d head scans. We further customized and randomized them with wardrobe. Hats, shirts, bottoms, dresses were built in Marvelous Designer based on an extensive texture shoot of our in-camera extras. The digi-doubles were assigned random pieces of clothing, and the clothing assigned random colours to give us a natural breakup.

As a further layer, we created a procedural tool that would add different blood splatters and stains on the clothes to ensure more randomization of our crowd, so that no two zombies would never have the same look.

Our library of green screen zombies were dressed in amongst our digital zombies to break up the CG. These also played well in closer shots, allowing us to fill in the crowd in tighter coverage more economically.

For the gore, an additional element shoot captured bespoke blood and gore elements, allowing us to build up a library to use in comp. We enhanced these with some CG blood elements for key shots.

We also created additional TV motion graphics for the Teddy McGiggle show that appear in sections of the film, a child-like juxtaposition to the more comedic gore elements in the film.

Finally, we added a small fleet of fighter jets, stealth bombers and helicopters in CG to the later scenes to bring even greater scale and believability to the climax, and of course added the huge explosion to the end, rounding the cinematic journey off with a huge bang and just a little splatter of blood.

Tools used include the likes of Houdini for bloods/ liquids and explosions, Maya for modelling and animation of zombies, and Nuke and Flame for compositing. Xsens MVN studio for motion capture, Marvellous Designer for wardrobes and additional Houdini work for the crowd duplications.

Notes:

Operation Buffalo

Vendor: Blackbird

Candidate Summary

Nick Ponzoni - *VFX Supervisor*
Wayne Osborne - *CG Artist*
Joshua Tilbrook - *Artist*
MJ Kim - *CG Artist*

Reel Summary

Synopsis:

At Maralinga in 1956, atom bombs were not the only things being tested. At the height of the Cold War, the human capacity for loyalty and betrayal were constantly pitted against each other. But not just in terms of espionage. Friend against friend. Lover against lover. Government against its people. If only trust could bloom in an infinite desert. But these are not trusting times.

Written Support Material:

A key sequence in Episode 1 of the ABC series Operation Buffalo that could only be achieved through VFX was of the Bristol Freighter carrying British officers coming in to land at the Maralinga airstrip. The Bristol freighter was an iconic aircraft during WWII and the years following the war, and in Operation Buffalo it is featured not only for historical accuracy but also to emphasise the ridiculous nature of the British officials behaviour and their disregard towards Australia with the over the top scene bringing a Rolls Royce to the outback.

This sequence had to be achieved through high-quality VFX for a number of reasons - not only due to budget considerations of flying a plane to a remote location to film, but also because this specific Bristol Freighter didn't exist in Australia. Even if the real plane was accessible for the shoot, the plane would need to look as it did in the 1950s and so a full CG approach was the most efficient solution. To achieve this, Blackbird modelled a 3D Bristol Freighter based on a large amount of photographic reference and archival footage of the real plane, not only to study how it looked but also how it flew and how it landed. We then composited multiple live action plates of the Rolls Royce and the cast against our 3D plane asset, with detailed dust FX used to help integrate all of these elements into a world which was unquestionably the Australian outback.
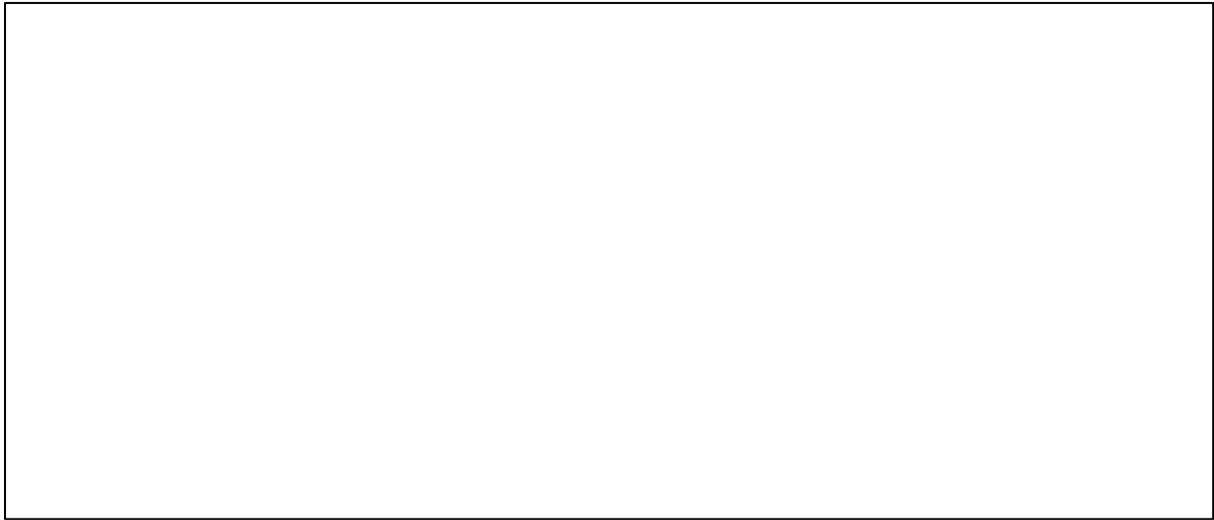
Also a key VFX sequence in Episode 1 was the Maralinga campsite, where Blackbird augmented the live action plate with a partial set build with 3D buildings, cars and digital doubles of soldiers to extend the size and scale of not only the military camp but also the desert landscape beyond it.

The biggest VFX challenge of the series was creating the nuclear blast at the climax of Episode 1 in an immersive close-up that atomises some unfortunate wanderers. This particular shot was intended to bring character to this destructive beast that appeared on occasion in the vast landscape of Maralinga causing death and radiation illness to the native communities that inhabited the area. For the bomb there was ample reference from the Nevada desert tests that were covered in a lot of detail with multiple cameras around the site capturing various aspects of the blast. We assembled key aspects of these references to gain an understanding of how the bomb blast and the surrounding area would look like from the vantage point in the script. It was important to have the physics as close to reality as possible given the gravity of the subject matter, as we didn't want this to be science fiction or creatively embellished.

Achieving the atomic blast involved a lengthy FX RnD process to generate a cinematic but realistic explosion that accurately matched historical references, followed by weeks of blast FX, dust

simulations and comp integration to make this nuclear event as intimidating and visually arresting as possible.

Notes: